

## EDITORIAL ..... 25

Steel price rise emphasizes need to take new look at escalators in long-term labor contracts.

## SPECIAL FEATURE ..... 32



Each of your salesmen will have to be kept as busy as the proverbial bee if he's to meet the test of today's hard-time selling. Check your company's efforts against those reported by other firms.

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Sales at 5.2 million to 5.5 million seen for '59 cars. Detroit doubts it can hold the price line.

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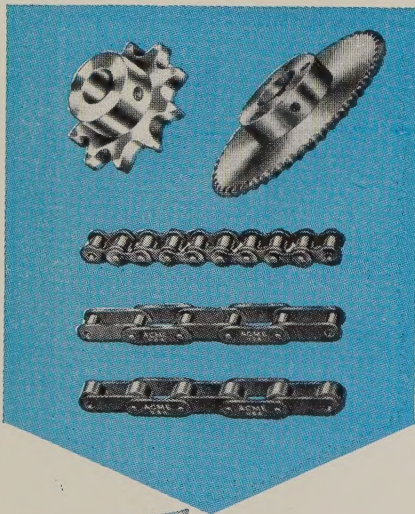
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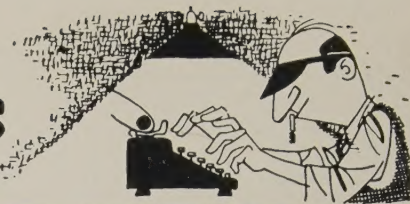
- ★ Keeps machine down-time to a minimum.
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- ★ You get quick, close-by advice and service.
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- ★ Simplifies purchasing.



Write Dept. 10-B for new 100-page Illustrated Catalog, including new engineering section showing diagrams of 36 methods of chain driving.



## behind the scenes



### Buzzing Cover

Let us fly away, in fancy, with this issue of STEEL to Boston, Paris, Rome, Madrid, and Dublin. The cover is bound to stir up much comment, and we are not above eavesdropping. Indeed, the appearance of a bee on a STEEL cover is a most unusual occurrence, and we would be remiss in our duties as tub thumper if we failed to make the most of it.

From an office high above the Charles River in Beantown: "Really! Apis mellifera, family apoidea, if my memory serves."

Over an aperitif on the banks of the Seine: "Sacre bleu! C'est un abeille!"

Through a transom in an office leaning against one of the seven hills of Rome: "Per Bacco! Una pecchia!"

Whispered in amazement from the siesta shade in Madrid: "Que tal! Una abeja!"

Shouted in a Dublin pub: "Ouch!" Clearly, the last remark required some explanation. "May we inquire, sir, why STEEL's cover moved you so deeply?"

"Well, it was on a chair, d'ye see, and Oi sat down on it."

"And what has that got to do with your shouting?"

"Ha! Did you ever sit down on a bumblebee?"

So much for imagination. Now for the facts. The title "Hard-Time Selling" stirred up some slight confusion among the hired hands. One school contended that it connoted extreme difficulty in making sales, something like trying to sell copies of *God's Little Acre* at a Sunday school convention. The other faction declared that it meant knocking on doors in depression times. In the first figure, prospects could buy, but wouldn't; in the second, they would buy, but couldn't.

As it turns out, "Hard-Time Selling" (Page 32) is aptly described. The article lists helpful sales practices, recognizes that the old "soft-sell" days are gone, and shows how orders can be cultivated in areas where faint hearts usually surrender. Hard-time selling means that salesmen have to get out and call on prospects, and rehearse their acts, and improve their stories, and knock, knock, knock—not their competition, but on their prospects' doors. STEEL Artist Tom Bryan figured that everybody knew how the busy little bee knocks itself out every shining hour calling on the trade, and that's how a member of the apoidea family finally made STEEL's front cover.

### Help for Renegotiation

If your company handles government contracts running into a million dollars or more, clip the article "Renegotiating

Government Contracts" (Page 30), and pass it around. This report brings us up to date on workings of a gimmick in federal contracts that could really burn you.

Renegotiation is a device whereby the government, after promising to pay a certain consideration in return for services rendered, reserves the right to welsh on the deal. It can summon your records and examine your profit. "You shouldn't ought to of made that much dough," it can say. "You're out of line, sonny. Kick some of that moola back to Uncle Whiskers, and be glad that money ain't ever'thing."

No businessman cares to figure his profits with the understanding that if he's right he's likely to be wrong, and if he's wrong to begin with, he can't stay in business very long. Beyond this, contracting parties who have been bitten once by Uncle Sam are careful to avoid future contracts. All this could lead to a pretty kettle of fish, but we're happy to see in STEEL's article that relief is on the way.

### Burning Blue

When Associate Copy Editor Glenn Dietrich checked the contents page of the Aug. 4 issue of STEEL, he noted a small picture of a hand holding a match. It was a diminutive replica of the cover art, but whereas the cover match burned red, the small replica burned blue. Glenn was disturbed. If he was stuck with blue on Page 5, there was nothing to do but get rid of the match. Wherefore he ordered a small halftone engraving of an illustration gracing a story on arbitration. This could run in blue without causing confusion, so he called Production Manager Albert Anderson.

"Is that a nice, solid blue you scheduled for Page 5?" he inquired.

"It was," said Andy, "but it isn't blue any more. It's yellow."

Glenn recovered his match in a hurry, and while it burned red on the cover, it glowed yellow on the contents page.

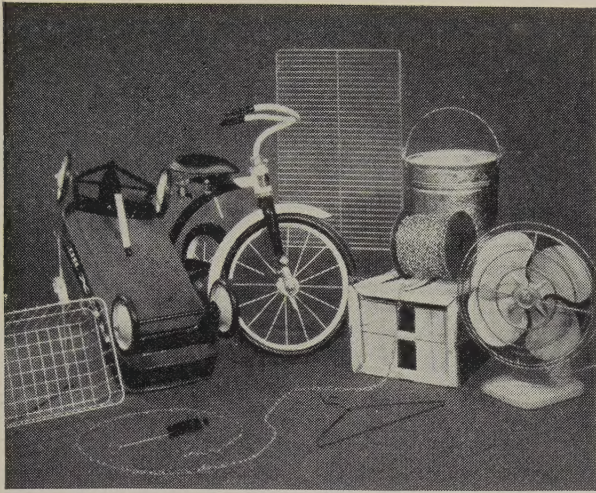
### A Yard of Slack

Let us assume that the earth is exactly 25,000 miles in circumference at the equator. Let us assume further that you have a piece of string 25,000 miles 3 ft long. If this were wrapped around the equator, both ends touching, how far would the string stand off the ground at each point, simply because it was a yard too long?

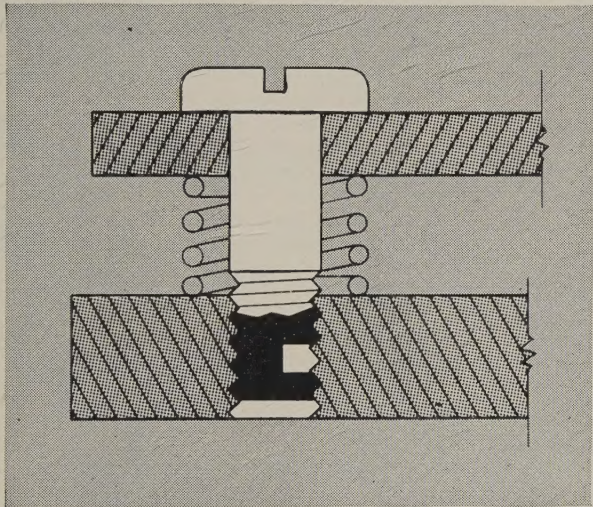
*Shrdlu*

(Metalworking Outlook—Page 21)

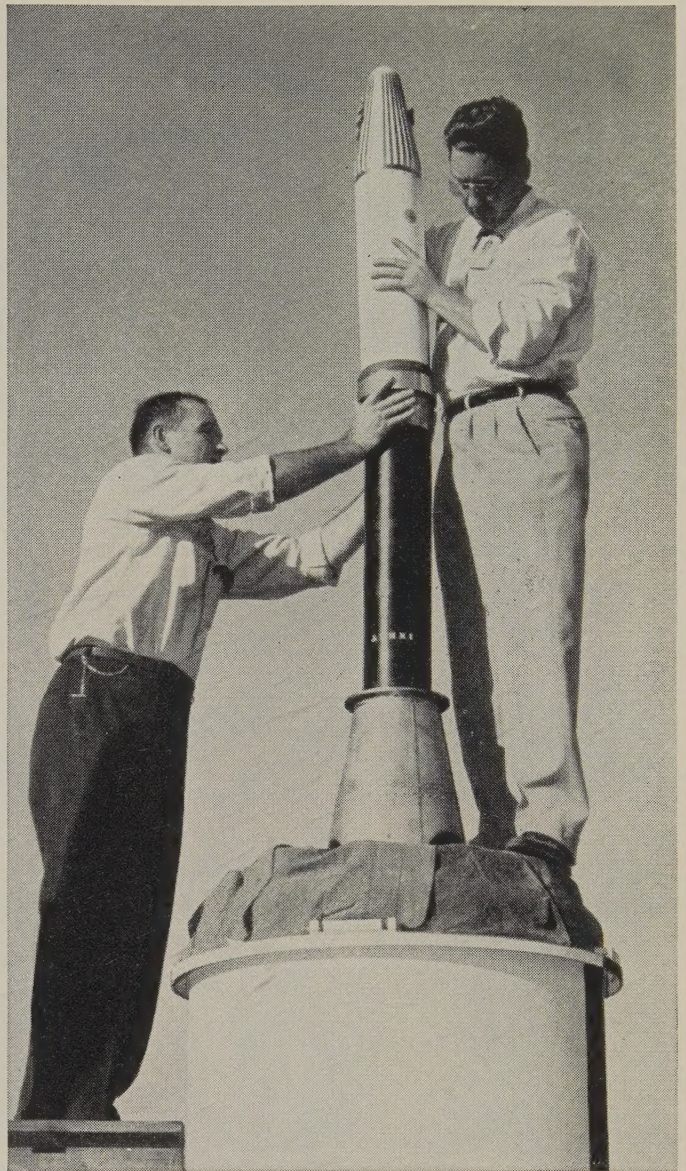




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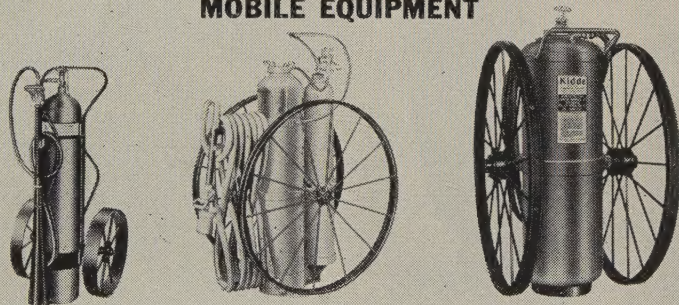
**PORTABLE EXTINGUISHERS**

Left to right: carbon dioxide trigger, carbon dioxide squeeze valve, 2 1/2 gallon foam, 2 1/2 gallon pressurized water, 20-pound pressurized dry chemical, 20-pound cartridge-operated dry chemical, 2 1/2 gallon pump tank, one quart pressurized VL. Also 1 gallon pressurized VL and 1 and 1 1/2 quart pump VL.

Kidde hand portables are designed to knock fires out *fast*, come in a variety of types and models. The Kidde line includes carbon dioxide extinguishers with fast-acting trigger release or squeeze-valve release in capacities of 2 1/2 to 20 pounds. Kidde dry chemical extinguishers can be had in pressurized models of 5, 10, 20 and 30 pounds capacity, and in cartridge-operated models of 20 and 30 pounds. Kidde wet chemi-

cal extinguishers (foam, soda-acid) are available in 2 1/2 gallon bronze or stainless steel models, including cartridge-operated and pressurized water or water-anti-freeze units. Kidde vaporizing liquid extinguishers come in pump capacities of 1 and 1 1/2 quarts, pressurized in 1 and 1 1/2 quarts and 1 gallon. Kidde pump tank extinguishers, in steel or copper shells, are available in 2 1/2 and 5-gallon sizes.

**MOBILE EQUIPMENT**



Left to right: 100-lb. carbon dioxide, 150-lb. dry chemical, 40-gal. foam. Also 40-gal. soda-acid.

For major fire hazards, get a mobile unit. Wheeled carbon dioxide units are available in 50, 75, and 100-pound capacities, in one cylinder. Shut-off valve located at nozzle gives operator complete control. 150-pound dry chemical unit has straight stream for long range... fan pattern for wide coverage.

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Kidde carbon dioxide extinguishing systems are individually designed to fully protect even the most dangerous hazards, use pneumatic control heads to insure instant and complete carbon dioxide discharge. Directional valves afford protection to more than one hazard using the same bank of cylinders. All operating parts are self-enclosed for safety. Visual indicators show at a glance if system is "set" or "released." Thermostatically-operated systems, and package systems for 6000 cubic foot flammable liquid hazards are available.

# Kidde



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## LETTERS TO THE EDITORS

### Small Car Owner Queries Detroit

In your July 21 *Mirrors of Motordom* (Page 86), you say: "With small car tooling already underway, Ford and General Motors still seem to be trying to justify building an American economy type car. Detroit isn't sure that the apparently growing market for European imports means people will buy U. S.-built economy cars."

Last month, we bought the second "furrin" car, mostly because it is adequate, safe, and comfortable transportation—and easily handled on streets and highways. Initial price and operational costs are not especially important to me, nor I suspect, to a few hundred thousand other owners.

Detroit seems to have a guilty conscience or else a fixation on price, with the fool notion that a smaller version of the Detroit behemoth is what we all pant for. As if they never heard of convenience, nor cornering and steering ease, and related characteristics common to most imports, even well under \$2000 (as is ours).

Have you ever asked your readers owning foreign cars if they can do without Detroit "style" readily, also motivational research and "prestige"? If they would like to go back to old Henry Ford's criterion: Simple, runs, in the low price range?

Theodore Kain

945 St. Paul Ave.  
St. Paul 16, Minn.

### STEEL Coverage Is First



Things are certainly progressing. STEEL had the great foresight to reproduce almost verbatim one of my papers, "Explosive Forces Widen Metallurgical Studies," in your Nov. 20, 1950, issue. This was the first public indication that explosives might have considerable commercial utility in the metals industry.

As the years go by, I must confess that I have been astounded by the way in which industry has taken up the challenge and is now envisioning the commercial utilization of explosives in a major way in their metal forming processes, particularly those situations where mechanical forming is unfeasible. I have been literally besieged by commercial users who are anxious to find out the present state of the art.

I was, therefore, delighted to hear that  
(Please turn to Page 12)

**STEEL**





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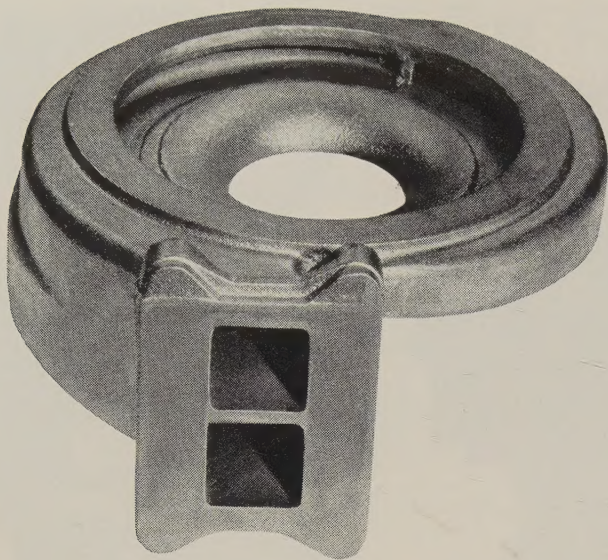
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Unit production costs are lowered by finding and using the most efficient material available. In this case, Ni-Resist castings combine design flexibility and machinability with long service life under severe temperature stresses. Ni-Resist castings from Hamilton Foundry have dimensional accuracy, uniform machinability, fine surface finish, a low rejection rate, and are delivered on schedule—a combination of factors which lower unit costs and insure Schwitzer's reputation for product quality.

When new and unusual design problems arise in the selection of metal and the casting of parts, you will find that the skill and integrity of your foundry is your best insurance that specifications—and delivery schedules—will be met.

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The Hamilton Foundry & Machine Co., 1551 Lincoln Ave., Hamilton, Ohio • TW 5-7491

## LETTERS

(Concluded from Page 10)

your magazine is preparing an article which should be of some help to these people.

John S. Rinehart

Assistant Director  
Astrophysical Observatory  
Smithsonian Institution  
Cambridge, Mass.

• STEEL's article on explosive forming of metals is planned for publication in the Aug. 18 issue.

### Pricing Data to Management

Please send six copies of the Program for Management article, "Pricing for Profit" (June 16, Page 87). They will go to top management.

John H. Lafferty

Manager, Cost Department  
Hobart Mfg. Co.  
Troy, Ohio

### Steel Salesman Likes Data

Please supply me with a copy of the article, "Are Your Inventories Right?" (June 2, Page 35). I sell steel for two noncompetitive warehouses. The information in this article is especially pertinent to the processed flat-rolled business.

Linton T. Steepee

Manufacturer's Representative  
Webster, N. Y.

### Article Interests Manufacturer

Your article, "Warm Heading Tackles Tough Metals" (July 21, Page 114), is of great interest to us. We would appreciate four copies.

B. J. Stahl

General Manager  
Stahl Mfg. Co.  
Detroit

### One of the Finest Guides Produced

We have read the Apr. 21 issue of STEEL and have found your "Guide to Tool Steels & Carbides" to be one of the finest crossindexes ever produced. Please send six copies.

J. J. Babbo

Wilkof Structural Steel Corp.  
Canton, Ohio

### President Requests Reprint

Please send six reprints of the Program for Management article, "Finding Out What Customers will Buy" (July 14, Page 101). Thank you for making extra copies of your articles available to your readers.

W. L. Clifton Jr.

President  
American Art Metals Co.  
Atlanta

Please send 25 copies.

D. F. Jurgensen

Vice President-Development & Research  
Blaw-Knox Co.  
Pittsburgh

STEEL



## CALENDAR OF MEETINGS

Aug. 19-22, American Institute of Electrical Engineers: Pacific general meeting, Hotel Senator, Sacramento, Calif. Institute's address: 33 W. 39th St., New York 18, N. Y. Secretary: N. S. Hibshman.

Aug. 19-22, Western Electronic Show & Convention: Pan-Pacific Auditorium, Los Angeles. Information: WESCON, 1435 S. LaCienega Blvd., Los Angeles 35, Calif.

Sept. 7-12, American Chemical Society: National chemical exposition and conference, International Amphitheatre, Chicago. Society's address: 1155 16th St. N.W., Washington 6, D. C. Executive secretary: Alden H. Emery.

Sept. 8-11, Society of Automotive Engineers: Farm, construction, and industrial machinery meeting, production forum and engineering display, Milwaukee Auditorium, Milwaukee. Society's address: 485 Lexington Ave., New York 17, N. Y. Secretary: John A. C. Warner.

Sept. 10-11, American Die Casting Institute: Annual meeting, Edgewater Beach Hotel, Chicago. Institute's address: 366 Madison Ave., New York 17, N. Y. Secretary: David Laine.

Sept. 11-12, Refractories Institute: Fall meeting, Broadmoor Hotel, Colorado Springs, Colo. Institute's address: 1801 First National Bank Bldg., Pittsburgh 22, Pa. Executive secretary: Avery C. Newton.

Sept. 14-19, Instrument Society of America: Annual instrument-automation conference and exhibit, Convention Hall, Philadelphia. Society's address: 313 Sixth St., Pittsburgh 22, Pa. Executive director: William H. Kushnick.

Sept. 15-17, American Rocket Society: Fall meeting, Hotel Statler-Hilton, Detroit. Society's address: 500 Fifth Ave., New York 36, N. Y. Secretary: A. C. Slade.

Sept. 16-18, Electronic Industries Association: Fall meeting, St. Francis Hotel, San Francisco. Association's address: 1721 DeSales St. N.W., Washington 6, D. C. Secretary: James D. Secrest.

Sept. 17-19, National Industrial Conference Board Inc.: General marketing conference, Waldorf-Astoria Hotel, New York. Board's address: 460 Park Ave., New York 22, N. Y. Secretary: Herbert S. Briggs.

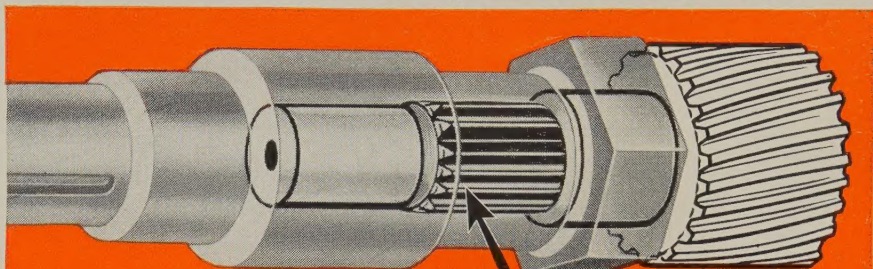
Sept. 19, Malleable Founders Society: Fall semiannual meeting, Hotel Cleveland, Cleveland. Society's address: 1800 Union Commerce Bldg., Cleveland 14, Ohio. Executive vice president: Lowell D. Ryan.

August 11, 1958

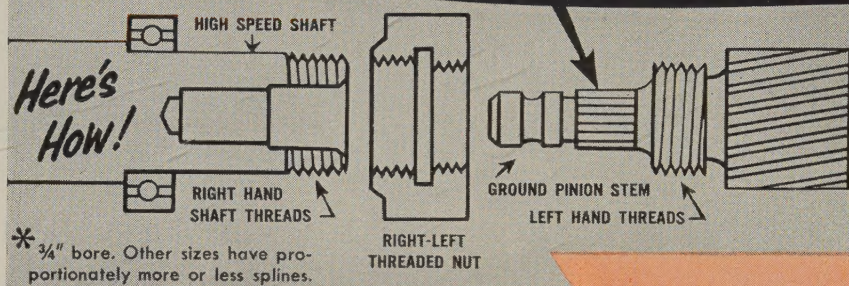
# FOOTE BROS. SPLINE DRIVE PINION

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### *to guarantee better power transmission*



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POSITIVELY ANCHORS PINION TO SHAFT**



## SPLINE DRIVE PINION

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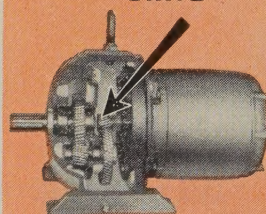
Self-centering action of ground pinion shank in the accurately bored high speed shaft assures accurate assembly and alignment for smoother performance.

### 4. DUTI-RATED GEARING

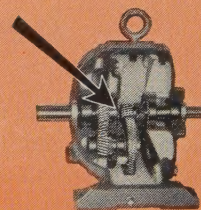
Footo Bros. Spline Drive Pinions have the famous Duti-Rated Gear—harder, tougher and more accurate, with greater load carrying capacity for their size than any other gearing.

**SPLINE DRIVE PINIONS** are another example of Footo Bros. leadership . . . another reason you can be sure you're buying the finest when you buy Footo Bros. Power Transmission Equipment.

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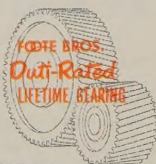


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this trademark  
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gearing made



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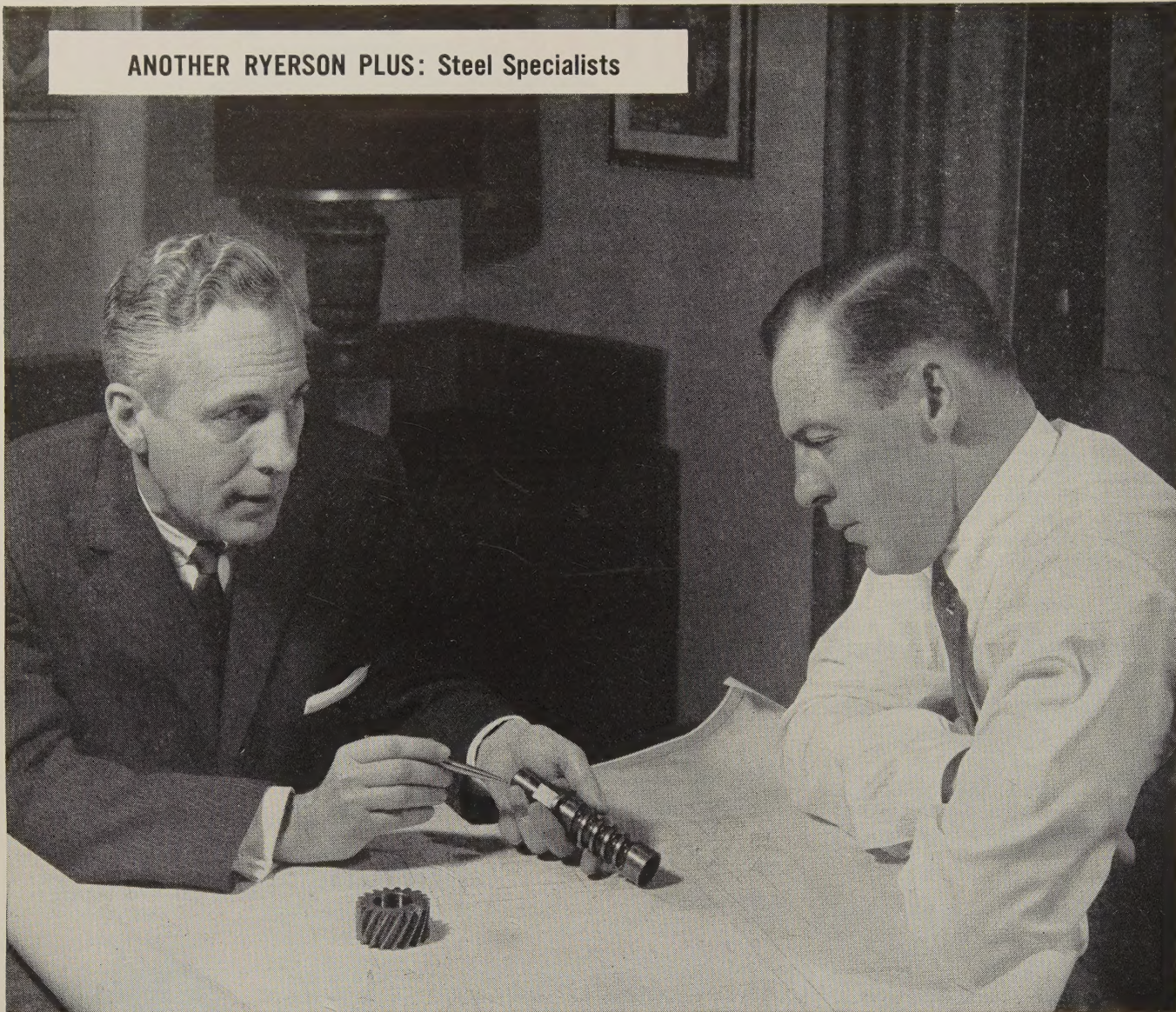
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for efficient delivery. This means a smoothly flowing production line while inventory investment is kept at a minimum.

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# Metalworking Outlook

## UAW Doesn't Want Strike, but—

Despite the threatening noises from the United Auto Workers, the union isn't keen about striking any of the Big Three auto companies. It may be forced to hit the bricks because the Big Three are still adamant and still united. Their position: We'll extend the present contract and risk a strike rather than grant much more. Although a 1.4-million car buildup has been scheduled for the fourth quarter, automakers still do not expect a large sales surge in these months because buyers have not recovered from the recession. Market forecasts already indicate that 1959 sales will not be so great that the industry can't build all the cars needed in the first three periods next year. By holding back production, there also might be more pent-up demand when cars do start rolling.

## Watch Ohio on Right To Work

Ohio will vote on a right-to-work law this fall. Approval would ban the union shop. Along with California, Ohio will provide a heavy industrial battleground for the issue this year. Victory over labor forces that oppose it would encourage proponents of the law in other industrial states. Although 18 states now have the legislation on their books, only one, Indiana, is substantially industrialized.

## Fringe Benefits Climb \$162

Fringe benefits average \$981 per full-time employee per year, says the U. S. Chamber of Commerce which has just surveyed 1020 firms on their 1957 experiences. That's an increase of \$162 since 1955, the date of the last survey. The \$981 includes \$310 for pensions and insurance, \$311 for vacations and holidays, \$170 for legally required programs (Social Security and others), \$104 for rest periods, and \$86 for other benefits.

## How Unions Pay Striking Members

Strike benefits are paid by 43 of 78 national unions surveyed by the National Industrial Conference Board. The 78 unions claim 11.1 million members, about 60 per cent of organized labor. The 43 unions paying strike benefits claim 7.5 million members. Thirty of those 43 have established funds to provide strike benefits by earmarking specific amounts of the per capita tax paid to the national union by the locals. Those amounts range from 5 cents to \$1 per month per member. The remaining 13 unions pay out of their general funds. Seventeen pay flat sums ranging from \$5 to \$40 a week, with a median of \$18. Most unions pay sliding scales based on need, marital status, and number of dependents.

## Texas Changes Its Mind

The Texas Highway Department at the last minute rescinded its proposed ban on the use of imported steel in road building projects. The U. S.



# Metalworking Outlook

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Bureau of Public Roads requested the action. Six other states are still enforcing bans on imported steel.

## **Memo on Metals**

No attempt is being made to establish an international agreement on aluminum imports and exports . . . But reports are current that such an agreement is being talked about for lead and zinc, to be worked out through the United Nations . . . Don't look for any change soon in the copper import duty . . . Look for the Domestic Minerals Stabilization Bill to die a quiet death in the House Rules Committee, so far as this Congress is concerned . . . Harvey Aluminum Inc. has become the sixth domestic producer of primary aluminum with the opening of its reduction works at The Dalles, Oreg. Capacity will be more than 50,000 tons yearly. Harvey will start shipping pig within 60 to 90 days.

## **Help on Exotic Fuels?**

To boost production of exotic fuels and high temperature alloys for missiles and aircraft, the Office of Defense & Civilian Mobilization is asking Congress to forgive \$300 million several government agencies owe the Treasury. (The money was originally borrowed for stockpiling.) No funds will be available after fiscal 1959 if the \$300-million debt stands, under Defense Production Act provisions. An ODCM advisory committee has also strongly recommended a stockpiling program for materials like boron which go into the new fuels and special alloys. The only other way funds could be made available (besides a direct appropriation) would be through sale of the stockpiled minerals to pay the debt. That's highly unlikely.

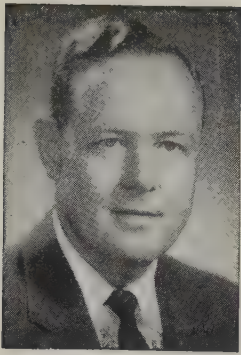
## **Diemakers See Autumn Upturn**

After a slight pickup in their business last spring, tool and die makers now say they're in a state of "watchful waiting." Orders for defense business have picked up, although other tooling orders are "spotty." Competition is keen. Most expect defense orders for tooling to be released at a faster pace this fall. Farm equipment companies have been ordering more special tooling than they have for several years.

## **Straws in the Wind**

Inventories may be down, but they still tie up nearly 30 per cent of the working capital of the average U. S. company . . . American companies have sharply expanded contributions over the years and now regard donations as one of the business costs, the Conference Board reports . . . Youngstown Sheet & Tube Co. has restored some salaried workers to a 40-hour week . . . The Senate Finance Committee will hold only brief hearings on the House-passed bill to boost Social Security benefits and tax rates; chances are good for Congressional passage . . . Auto air conditioning is riding a boom despite the slump in car sales; volume will reach \$150 million this year.





August 11, 1958

## Steel Prices and Inflation

For many weeks, the editors of this magazine have been predicting that higher steel prices would inevitably follow the higher wage costs that became effective July 1.

Since Jan. 1, wages have gone up 25 to 30 cents an hour. Increases in base pay, shift premiums, Sunday and holiday pay account for about 15 cents; the rapid rise in the consumer price index accounts for 10 cents; and incentive bonuses account for as much as 5 cents.

Direct labor costs on the basis of 20 manhours per ton of steel produced have increased \$5 to \$6 a ton. Indirect costs, based on experience, have increased as much as the direct cost of labor.

We believe that the steel industry had no alternative but to recapture part of its added costs if it hopes to maintain a strong basic industry as the foundation for economic growth and national defense.

But the increase does revitalize issues that must be faced.

Trust Buster Victor R. Hansen of the Department of Justice says he's giving "extremely close scrutiny" to the fact that steel companies "marched up the hill together in raising prices."

Senator Kefauver asks why identical prices are put into effect at the same time although each company has different costs.

Labor says the steel industry can absorb higher labor costs because of increasing productivity.

These charges can be answered, but answering a more serious one (that steel is contributing to a new inflationary spiral) will not be so easy.

The long term contracts signed by steel and labor in 1956 (and earlier by the auto industry) had the advantage of assuring labor peace for more than a year but the disadvantage of having built-in inflation factors that function whether business is good or bad.


The worst disadvantage of all is the wage escalator tied to the admittedly obsolete consumer price index. It has contributed to a 17-cent wage increase since the wage contract was signed.

In signing new labor contracts, both management and labor need to take a new look at terms that may be committing our economy to ever-rising wages and prices.

There is an alternative: Government controls.

*Irwin H. Such*  
EDITOR-IN-CHIEF






JAI-ALAI  
ACE  
FAILS  
TO FLAKE  
INLAND

TI-CO

## FABRICATION WON'T FLAKE TI-CO EITHER

A jai-alai ball travels at speeds over 100 m.p.h.—hits with terrific impact. From a distance of only 60 feet, one of Mexico's leading jai-alai players, Jose Fuerto, slammed the ball into a TI-CO Galvanized Sheet again and again—severely pounding it—but there wasn't a sign of flaking!

In your manufacturing operations, TI-CO can be deep drawn, stamped, bent, crimped, lock-seamed, even spin-drawn, without flaking or peeling. In fact, any product that can be made from cold rolled steel can be made from TI-CO, giving your product dependable protection against corrosion and an eye-appealing finish that can mean stepped-up saleability.



If you are designing or manufacturing a metal product that requires rugged strength plus corrosion resistance, you'll find TI-CO Galvanized Sheets the practical and economical solution. Coils or cut lengths up to 60" widths; gages 8 to 30 inclusive. Consult your local steel distributor or Inland representative. Write today for a free, informative booklet on TI-CO.



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## What the Steel Price Rise Adds to Cost of an Item

	Added cost of Steel only	Added cost as % of selling price
\$212 electric motor (5 hp, ac) . . .	\$0.36	0.17
\$500 refrigerator . . . . .	0.65	0.13
\$3000 automobile . . . . .	8.00	0.27
\$4500 lift truck . . . . .	25.00	0.55
\$18,000 house . . . . .	18.00	0.10
\$23,000 screw machine . . . . .	16.00	0.07



## Steel Prices: What They Mean to You

Consumers are going to absorb much of the ferrous price hike, but it's not going to be easy. Senator Kefauver is threatening price and wage controls and legal action

STEEL CONSUMERS aren't applauding higher prices, but they're accepting them.

They admit that the industry has a good case: Half a dozen steelmakers lost money during the first half. Failure to raise prices after the July 1 boost in wage rates would have compounded the losses.

**Consumers' Dilemma** — Although they regard the \$4.50-a-ton hike as moderate (STEEL predicted \$4 to \$6 on May 12), consumers will have a hard time absorbing it. Their profits have been steadily eroded since the recession began. Competition has been so keen that many have had to cut their prices in the face of steadily rising costs. (Look for iron ore prices to be increased at the end of the 1958 shipping season. They weren't revised in '57.

In spite of the profit squeeze, steel

users will tighten their belts another notch. An Indiana partmaker put it this way: "If we raise our prices 4 per cent (enough to pass along higher steel costs), we'll lose out to some competitor who holds the line—and plenty of them will."

**How They'll React**—Consumers will absorb, at least temporarily, a greater percentage of the ferrous price increase than they have in any previous postwar period, a STEEL survey indicates (July 14, p. 61). Capital goods makers interviewed say they'll absorb about 90 per cent; manufacturers of consumer durables will also absorb 90 per cent. Makers of components say they'll be able to absorb only 60 per cent, while makers of construction equipment report plans to absorb about 75 per cent.

Those are arithmetical averages. Respondents' answers varied greatly. Even direct competitors give diametric answers. One maker of wire shapes says he'll pass along the entire increase; another says he won't pass any of it on. Basic pricing policies explain the variations. Some companies intend to sell quality, but most believe keen price competition is the major factor.

Considering consumers' pass-along plans, it might be argued that Sen. Estes Kefauver (D., Tenn.) is barking up the wrong tree. He's barking too loud, perhaps, but there's no denying that the increases will be inflationary. Most partmakers will raise their prices as soon as business conditions permit. Manufacturers will have to pay more for steel components, and the markups will pyramid. Labor costs will rise faster than productivity in many industries that follow the steel wage pattern. By mid-1959, a 2 or 3 per cent advance may be seen in the consumer price index.

**Who's Responsible?**—Steelmakers



concede that the time wasn't right for an increase, but argue that they had no choice. Their employment costs rose about 25 cents per man-hour on July 1 (when workers received wage increases guaranteed by contract). It takes about 20 hours to make a ton of steel, so \$5 was added to the cost of every ton produced. Industry earnings were unsatisfactory before wages went up (several companies lost more than \$1 million during the first half), and it was obvious that something had to be done. July 1 was the logical time for a price hike, and U. S. Steel Corp. was expected to lead. But late in June, Clifford F. Hood, Big Steel's president, made it fairly clear that it would do nothing on July 1: The only thing we have decided to date, he said, "is not to attempt to change our prices until the situation clarifies itself."

**Why U. S. Steel Delayed**—Mr. Hood declared that price action would hinge on "competitive conditions in the steel industry, competition with other materials, underlying customer product demand, and the economic climate and outlook together with other factors." U. S. Steel also didn't relish spending the time and money to again explain to Senator Kefauver and his committee how the steel industry operates.

**Why Armco Acted**—So U. S. Steel waited. Armco Steel Corp. took the initiative on July 29, raising its sheet and strip prices an average of \$4.50 a ton, effective July 31.

Noting that Armco's announcement came only 2 hours after Roger M. Blough, chairman of U. S. Steel, said his company "had nothing in mind" on prices, some observers suggest that Armco acted in desperation, realizing it couldn't outwait the corporation. Logan T. Johnston, Armco's executive vice president denies it. "We had made up our minds to raise prices before Mr. Blough's statement. As a matter of fact, we weren't aware that he had said anything on the subject prior to our announcement.

"The impact of the wage increase granted in connection with our three-year contract convinced us that we had to raise our prices. By the end of July we knew our tonnage for the month, and we had a pretty good idea what August and September would be like. Knowing what our increased labor costs



would be, we made a projection for the third quarter. It didn't look good, and we saw that we had to have higher prices."

By July 31, some of the misgivings that steelmakers felt earlier in the month about raising prices had been dissipated. There was an element of risk in a July 1 announcement, when it seemed that shipments might drop to the year's lowest level. If that had happened immediately after a price hike, Senator Kefauver would have shouted "I told you so."

On Wednesday, July 30, Republic Steel Corp. met Armco's prices. Later in the day, Jones & Laughlin Steel Corp. and National Steel Corp. took like action. U. S. Steel waited until Thursday, July 31, to announce comparable increases. In the next ten days, much of the industry followed, to boost across the board except for tin plate and stainless.

**Price Restraint**—Armco estimated its price increase at 2.75 per cent on the products affected, compared with an employment cost increase of 6.75 per cent. U. S. Steel boosted prices about 3 per cent and said that its employment costs had jumped 5.5 per cent. Unless there's a substantial improvement in shipments dur-

ing the second half, steelmakers won't be able to maintain their first quarter earnings (5 cents on the sales dollar). The \$4.50-a-ton increases will barely cover the higher labor costs, to say nothing of purchased goods and services. By the first quarter of next year, the \$5-a-ton labor increase will have a \$10 impact on the cost of making steel.

**The Scapegoat**—Senator Kefauver has indicated that he'll hold U. S. Steel responsible for the price increases even though it didn't initiate them. Odds are that he'll invite industry and union officials to testify before his Antitrust & Monopoly Subcommittee but not until after Congress adjourns (probably Aug. 16).

Victor R. Hansen, assistant attorney general in charge of the Antitrust Division, has already testified before the subcommittee. He said that the Justice Department is "closely studying recent price increases in the steel industry to determine whether they are the result of a conspiracy to fix prices or are an indication of monopoly control over the industry."

He added that the department as yet had reached no conclusions, but that if evidence is found indicating violations of antitrust laws "we



## Steel Product Price Increases at a Glance

	Base Price Old	Per Net Ton New
Hot-rolled sheets . . . . .	\$98.50	\$102.00
Cold-rolled sheets . . . . .	121.00	125.50
Galvanized sheets . . . . .	132.00	137.50
Hot-rolled strip . . . . .	98.50	102.00
Cold-rolled strip . . . . .	143.00	148.50
Hot-rolled carbon bars . . . . .	108.50	113.50
Reinforcing bars . . . . .	108.50	113.50
Cold-finished bars . . . . .	146.00	153.00
Hot-rolled wire rods . . . . .	123.00	128.00
Manufacturers' drawn wire . .	153.00	160.00
Plates . . . . .	102.00	106.00
Structurals . . . . .	106.00	111.00

## Steel's Wage & Price Record

Year	Average Base Price Increases	Increase in Total Hourly Employment Costs
1958 . . . . .	\$4.50	\$0.250
1957 . . . . .	6.00	0.262
1956 . . . . .	8.50	0.232
1955 . . . . .	7.35	0.210
1954 . . . . .	3.00	0.072
1953 . . . . .	4.00	0.125
1952 . . . . .	5.20	0.201
1951 . . . . .	X	0.206
1950 . . . . .	5.50	0.155
1949 . . . . .	4.00	0.074
1948 . . . . .	9.35	0.116

X Korean War price controls and court-contested steel strike delayed price action until 1952.

shall, of course, move appropriately." Mr. Hansen said the agency is giving "extremely close scrutiny to the fact that steel companies march up the hill together in raising prices."

John W. Gwynne, chairman of the Federal Trade Commission, also testified before the subcommittee and said that his agency "has never found a violation of a 1951 cease and desist order against steel companies involving conspiracy to fix prices."

Mr. Gwynne told the antitrust group that the FTC "has looked over the record of the Senate panel's previous hearings and the consensus is that nothing you've turned up warrants FTC action."

He stressed the fact that while his agency is concerned over the inflationary aspects of the steel price increase, its sole authority is to enforce antitrust laws.

**Automakers' Reaction**—The automotive companies are resigned to paying more for steel. They expected it this year and priced their cars accordingly. They can absorb higher steel prices as they wind up production of the '58s, but they can't absorb higher costs of steel, labor, and purchased goods and services. They may not raise prices on all of next year's models, but

they'll go up on the high volume lines.

Automakers say the outcome of their labor negotiations will have much more effect on new car prices than the cost of steel. The raw materials required for a standard sedan (without accessories) of the Ford-Chevrolet-Plymouth class cost about \$800. The added expense of steel used in such a car will be about \$8, or about 1 per cent of the total material cost.

The average hourly employment cost per worker (including fringe benefits) is \$2.90. If the automakers get the best settlement imaginable (a straight contract extension), annual improvement and cost-of-living factors will add 9 cents to hourly employment costs. Any productivity gains will be offset by inflation. Labor's going up at least 3 per cent.

**Another Facet**—Oil companies, it is estimated, will pay about \$27 million more for steel goods during the next 12 months as the \$4.50 increase becomes general.

## British Recession Deepens

Inventory reduction is also giving British steelmakers headaches. It's singled out as the reason why steel production in the second quar-

ter ran about 10 per cent under last year's. (Production in June was about 373,600 tons.)

Sheet and plate makers are working at capacity to supply auto and shipbuilders, but over-all first half production of steel (10.5 million tons) is 5.5 per cent under that of 1957's first half. During the first five months, domestic deliveries fell 3 per cent, exports 13 per cent. A partial explanation for the decrease in exports: British automakers are taking sheets which otherwise would have been exported.

Vacations are idling most plants for two weeks (the last in July and the first in August).

Unemployment is at its highest peak in several years. In the steel industry, 9000 workers are registered as idle, vs. 3000 a year ago.

## Frederic H. Chapin Dies

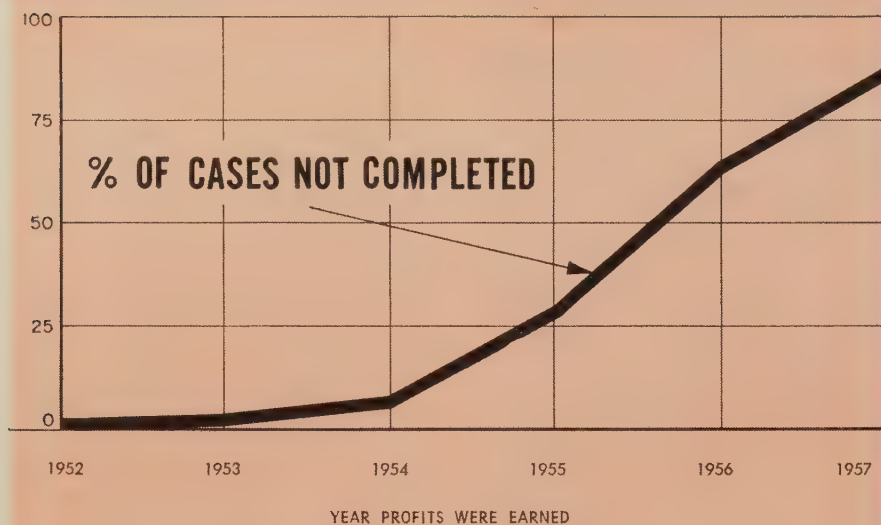
Frederic H. Chapin, 83, chairman of the board of National Acme Co. and Ohio Machine & Forge Corp. died at his Cleveland home Aug. 5.

Mr. Chapin was president of National Acme from 1926 until he was elected board chairman in 1957. He was also a director of White Motor Co., Oliver Corp., and Eaton Mfg. Co.



# What's Wrong with Renegotiation:

1. The board is years behind in its findings.



Source: Renegotiation Board.

2. It's killing the incentive to cut costs.

Company	Incentive Earnings	Renegotiation Refund to U. S.
Boeing Airplane Co.	\$11 million	All but \$3 million.
Grumman Aircraft Engr. Corp.	4 million	All, plus \$2 million of basic earnings.
Lockheed Aircraft Corp.	4 million	All, plus \$2 million of basic earnings.
North American Aviation Inc.	7 million	All but \$1 million.

Examples occurred in 1953. Source: Aircraft Industries Association.

3. It's a headache for basically nondefense industries.

Preparation of information to file for exemption under the Renegotiation Act costs literally thousands of dollars, and at best it's based on estimates.

—American Steel Warehouse Association.

4. It discourages small firms from doing defensework.

Says Rep. William Hill (R., Colo.): Exemption from renegotiation should be granted firms doing up to \$5 million worth of government business a year, instead of \$1 million. "The only value of renegotiation is in its application to the hundred or so largest military contractors that traditionally serve as sole source suppliers on complex items. For all other companies, where competition is present, renegotiation serves little purpose other than to increase the burdens of accounting and administration. Only the most meager portion of dollars recaptured come from other than the top 100 defense contracting firms."

# Needed:

DO FIVE MEN determine the progress of our national defense? "Yes," if you listen to William Allen, president, Boeing Airplane Co. "No," if you believe Thomas Coggeshall, chairman of the Renegotiation Board.

**A Matter of Judgment**—Mr. Coggeshall heads a five-man group in Washington that decides what profits earned on government business are "excessive" and orders their return to the U. S. Treasury. If you do \$1 million worth of business with Uncle Sam a year, you're subject to the Renegotiation Act.

Mr. Allen contends the way the act is being administered is "contrary to the intentions of Congress" and is "harmful to the national defense." Testifying before the House Ways & Means Committee as the spokesman for the Aircraft Industries Association, he championed a proposal which would permit defense contractors to keep profits gained through increased efficiency.

Many defense contracts contain an "incentive" clause, which allows contractors to keep 20 per cent of the profits they gain by underrunning target cost; 80 per cent is returned to Uncle Sam. But, said Mr. Allen, the Renegotiation Board is reclaiming those incentive profits. On B-47 and C-97 orders in 1952-54, he reported, Boeing earned \$25 million (before taxes) in incentive profits but was told to return \$27.5 million (before taxes) to the government. Boeing reduced the cost of the B-47 from \$2.5 million each on the first order to \$1.1 million each by the time of the third follow-on contract. Profits per pound of the aircraft dropped from \$2.26 to \$1.73, while labor, engineering, and material costs rose.

**Government Equipment**—Without profits, concluded Mr. Allen, the industry cannot enlarge its research and development facilities (for national defense) or entice investment capital; it must depend on defense research contracts and government-furnished equipment. In the case of jet tankers, Pentagon money wasn't available, Mr. Allen pointed out, so Boeing spent \$16 million of its own money for devel-



# Changes in Renegotiation Laws

opment before it got a defense contract. The industry generally plows back 60 per cent of its earnings (vs. the national manufacturing average of 40 per cent).

**Not Only Aircraft**—Others testifying against the Renegotiation Act: American Steel Warehouse Association, Electrical Equipment Representatives Association, Machinery & Allied Products Institute, National Association of Manufacturers, and U. S. Chamber of Commerce.

On the day of the committee hearings, identical bills were introduced into both houses of Congress amending the act to eliminate from renegotiation: 1. Fixed price or incentive contracts subject to price redetermination or revision clauses. 2. Contracts awarded after competitive bidding by three firms (at the contractor's option). The bills were deemed advantageous to small business.

They have little chance of acceptance by this Congress but give a clue to what may be done by the next. Action in 1959 will probably be imperative because Ways & Means last week voted to extend the present Renegotiation Act for a mere six months, a proposal likely to be O.K.'d by the full Congress. The committee believes that time is too short to enact complete reform in this Congress.

Explaining the headaches renegotiation causes, Charles Stewart, MAPI president, cited this extreme example: A "commercial capital goods maker," not directly involved in the defense effort, is still appealing a board decision demanding the return of profits earned in 1952. The 237-employee firm has spent 130 weeks of executive time and \$37,000 to process the case so far.

To determine what is exempt from renegotiation, a steel service center must carry a heavy load of paperwork to record end uses of its sales, Robert Welch, executive vice president, ASWA, told the committee. Warehouses buy in tonnage lots, sell in amounts averaging about 800 lb; Mr. Welch believes competition in his industry demonstrates that excessive profits are not being made. He suggested the act be re-

vised to recognize that.

F. M. Ballou spoke in behalf of manufacturers' representatives. An individual is subject to renegotiation if he earns more than \$25,000 a year from government contracts. Mr. Ballou wants the floor raised to \$100,000 and only earnings over that amount to be subject to the act, rather than all earnings.

**The Pentagon's Position**—Robert Dechert, the Defense Department's general counsel, stood his ground in the face of the attack. Noting that President Eisenhower had requested extension of the act, he added: "Only renegotiation can be fully effective to assure the government gets what it needs for defense without paying excessive profits." Where renegotiation must continue to operate, he believes, is in complex weapons where cost experience is lacking. Defense Secretary Neil McElroy reported spending subject to renegotiation rose from \$18 billion in fiscal 1957 to \$19 billion in fiscal 1958.

Mr. Coggeshall commented: "The mere existence of the renegotiation authority frequently induces contractors to price more closely than they otherwise would." He denied, upon questioning by Rep. Richard Simpson (R., Pa.), that the act is an "economic whip," forcing business to toe the Pentagon's line.

Rep. Noah Mason's (R., Ill.) contention that renegotiation allows for "careless" contracting procedures was backed up by Mr. Stewart: "Congress will not get a completely streamlined procurement system as long as it is on the books." It's a "crutch" for the Pentagon, added an NAM spokesman.

**What's Ahead?**—Rep. Thomas Curtis (R., Mo.) thought Defense could easily certify in the contract itself whether renegotiation was required, rather than putting a firm's whole government business under the act's jurisdiction. He added that renegotiation goes on every day in private business between buyer and seller, but that the Renegotiation Board is a third party, which "second guesses" the Pentagon. Mr. Allen reported the board's local people in California (there are three

regional boards—Los Angeles, Detroit, and New York—besides the Washington group) had cleared Boeing on one contract, but the Washington board asked for a return of \$10 million. That, he said, is an example of a third party's lack of experience with a particular industry. Mr. Stewart thought it was more a matter of arbitrariness or capriciousness on the board's part.

Mr. Coggeshall claimed impartiality, but produced figures showing the aircraft industry to have the second highest return on net worth of any industry in the country (20.4 per cent, vs. a national average of 13 per cent). Representative Curtis thought one of the board's "guidelines" should be the fact that the industry needed more private capital: If it doesn't get it, "we'll have more and more government financing, and talk of savings by renegotiation to the taxpayer will be just so much talk."

**Rebuttal**—Trying to find a middle ground, Rep. Cecil King (D., Calif.) asked that the board's findings be made subject to appellate court review as well as tax court review (which today is the final authority on board decisions, except on constitutional or jurisdictional grounds). He also urged renegotiation be put under the Administrative Procedure Act, which would make board hearings a matter of public record, and require courtroom procedures.

Mr. Coggeshall, giving some ground on technical matters like Representative King's proposals, claimed cost estimates of defense business would continue to be unsound and incentive profits the result of "windfalls because of an unexpected decrease in costs which were perhaps originally overstated." As an authority for his views, Mr. Coggeshall turned to Rep. Carl Vinson (D., Ga.), chairman of the Armed Services Committee, whom he reported as believing renegotiation is needed more today than in 1951 when the act was passed.

Arguing that a review of all profit-limiting legislation is needed, Mr. Stewart summed up industry's



argument: It is an act in which "no one believes in principle"; the board's rulings cannot be "diagnosed or reviewed." It is symptomatic of profit control which is "creeping into" our economy more and more.

**And Representative Mills?**—In a legislative system almost dominated by the committee system, industry must take its lead from the committee chairman. So listen to Rep. Wilbur Mills (D., Ark.), chairman of the Ways & Means Committee: There is some occasion for renegotiation when we spend \$40 billion a year on defense; "the problem is to draw a line and continue it without impeding the national defense."

As with the hope for better depreciation laws, industry will be watching Representative Mills in 1959.

## TMCA Makes Foreign Tie

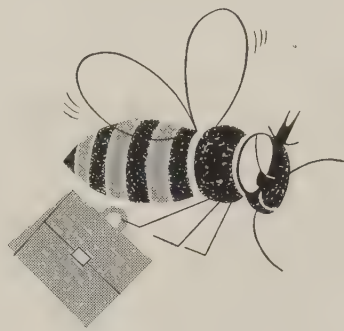
Titanium Metals Corp. of America joined with Germany's Deutsch Edelstahlwerke to form a new company: Continental Titanium Metals Corp. It will pioneer mill products for distribution solely to civilian industries, with emphasis on petrochemicals and chemical processing uses.

Besides grabbing a chunk of the European market, TMCA hopes to cash in by obtaining technical and marketing information that will aid in expansion of civilian uses for titanium in the U. S. Most U. S. talent and resources have been oriented toward the aircraft industry, claims TMCA.

## Brazilian Plant Expands

Acos Villares S. A., Sao Paulo, one of Brazil's largest producers of special alloy steels, has signed a credit agreement with the Export-Import Bank in Washington for \$1.7 million.

The money (and more from European and Brazilian sources) is to be used to finance an expansion program calling for the purchase of about \$3 million worth of machinery from the U. S. and Europe. The firm wants to buy rolling mill, forging, and foundry machinery and equipment in the U. S. Most purchases will be for delivery before the end of the year.



## How Hard Are You Selling?

1. Have you increased your sales force this year?
2. Have you introduced any new products?
3. Are salesmen averaging six or more calls daily?
4. Have you increased help to the salesmen with sales aids, direct mail, and advertising programs?
5. What have you done to assist independent distributors?
6. How have you improved customer service?
7. Have you considered territory changes or realignment of your sales organization to gain strength?
8. Where possible, are salesmen doing most of their traveling after 6 p.m.?
9. Have you found ways to help your customers sell their products?
10. How have you increased the salesman's incentive to keep bucking today's tougher odds?

## Needed: Hard-Time Selling

Cost cutting is still a major antirecession tool. But if you can't answer yes to most questions in the checklist, you're behind the more aggressive metalworkers

METALWORKING'S hard sell attitude is tersely pinpointed by an eastern executive: "Fifteen months ago, our plant workers averaged 48 hours a week while management coasted at about 36. Today, our management is working 50 hours (often more) and workers 36."

When the recession hit its worst depths during the last months of 1957, management first turned its attention to production costs. Cost cutting is still a major activity, and

a second front (sales) has been opened up. The object: How to get the most from salesmen.

**Don't Cut Back**—One good way not to get maximum production from sales personnel is to decrease their number.

National Acme Co. increased its sales force by 10 per cent. It eliminated paperwork by furnishing each salesman with portable dictating equipment. After each call, a report is dictated before the salesman



leaves the parking lot. At night, the disc is mailed to the home office. Results: Territory coverage has been doubled and per-call costs have been cut 24 per cent.

Says A. F. Golick, sales vice president, La Salle Steel Co.: "You can't repeal the law of averages. The more calls a salesman makes, the more sales he'll get. We're encouraging salesmen to budget their time so they can make that extra call or two per day."

Most firms queried by STEEL report their men are averaging five to eight calls daily—two more than last year.

**What To Sell**—The most important thing to a customer is not who's selling but what he's buying. If your product is moving slowly, investigate a new one.

National Acme developed a machine to mill, slot, drill, and tap a carburetor part. Savings amounted to \$1.90 per carburetor. To stay competitive, every firm making carburetors needed the machine. National Acme sold 16.

A. M. Byers Co., Pittsburgh, introduced 4D wrought iron this spring with the biggest campaign it had ever undertaken. Last fall, alloy and stainless steel specialties were added to its carbon steel line. Profits in the second quarter hit \$280,050 on \$6.8 million sales, vs. \$39,950 on equal sales a year ago.

**Make Them Want To**—It's one thing to give salesmen a pep talk about making more calls and it's still another to see that they do it. They will if it's worth their while.

Many makers of industrial products are following producers of consumer goods in the use of contests and incentive programs. Clark Equipment Co.'s Industrial Truck Div. last fall sponsored a Miami-Cuba vacation trip contest. Result: The highest December sales in its history.

Part of Operation Spark at the Data Processing Div., International Business Machines Corp., is a personal recognition program. A "salesman of the week" is selected from each district and region. Winners get prizes and write-ups in the company's house organ, relates Robert Hubner, sales manager.

Bonuses also help morale.

**Pamper Distributors** — Independent distributors are being hurt by the recession, too. The companies

making profits are the ones that haven't forgotten them.

Gibson Refrigerator Co., whose first half appliance sales were 16 per cent ahead of 1957's, finds a twist on the radio telephone quiz successful. Each week material is mailed to distributors. (It might include product, company, or general industry information.) A distributor is called (his name is pulled from a hat) and asked a question based on the material. If he has read it, he will win a prize easily.

Improved customer service is another good weapon. Rockwell Mfg. Co. holds 2-hour customer seminars on valve maintenance for chemical and refining plants. It's a low-pressure technique, but officials report they're pushing it harder than ever.

T. L. Strimple, National Acme president, says expanding engineering service is another aid. Sales engineers assist customers with handling problems and allied operations (such as flame hardening, in connection with screw machine operations).

Steiner Co., Chicago, which makes towel cabinets, and soap and toilet paper dispensers, helped itself by helping a customer. Clean Linen Service Co., Birmingham, started a sales contest. Steiner joined in. It prepared literature and sent out its salesmen with Clean Linen's to make suggestions and to help clinch orders.

Sylvania Electronics Tubes Div., Sylvania Electric Products Inc., sells to distributors, but this year will contact 25,000 dealers in an effort to better its tube renewal market.

**And Still Others**—La Salle's Mr. Golick believes that territory shifts also can help stimulate business. "A salesman sometimes gets into a rut working the same area for many years. New faces and challenges can often rejuvenate him. We've found too that a new man in a territory will invariably come up with several new accounts, no matter how effective his predecessor was."

A form of self-help is applied at La Salle. Salesmen assist each other by reporting case histories of how customers were helped by using the company's products. The material is co-ordinated and distributed by the main office.

Some metalworkers are emphasizing quality rather than quantity in

calls. DoAll Co., Des Plaines, Ill., finds its "Headliner" programs are paying off. It takes a single product and puts on a special push for 30, 60, or 90 days.

"We develop presentations for salesmen," explains L. R. Rothenberger, vice president. "We tie in direct mail and advertising programs to provide additional impetus." In one 60-day campaign this spring, DoAll's sales in the Cincinnati territory were boosted 35 per cent over the previous six-month average.

**Don't Panic**—Sales come harder during hard times, but they can be had with intelligent planning. Don't cut salesmen's salaries if it can be avoided. It's a morale killer.

STEEL's survey indicates that only a few firms have cut salaries of sales personnel. Only a third have reduced sales forces; an equal percentage have increased them. The same trend is true in expense allowances and advertising and promotion outlays.

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*\* An extra copy of this article is available until supply is exhausted. Write Editorial Service, STEEL, Penton Bldg., Cleveland 13, Ohio.*

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## More Permit Panel Walls

Modern metal curtain wall building construction is gaining wide acceptance in cities over the country.

Of 100 cities surveyed by the American Iron & Steel Institute, 78 either permit panel type construction or are considering building code amendments to permit it.

The future use of thin, lightweight panels to enclose buildings was retarded for some time by outmoded building codes which dictated the kind and thickness of material to be used instead of specifying standards of performance.

Widely recognized codes such as the Basic Building Code, the National Building Code, the Southern Standard Building Code, the Uniform Building Code, and the Standards of the National Fire Protection Association contain up-to-date provisions.

In general, those codes specify noncombustible construction instead of masonry or concrete, and vary the fire resistance requirements according to the distance between the building and any possible fire exposure rather than specifying an arbitrary minimum of fire resistance.





HUGH LITTLE

### How Missile Contracts Are Landed

AT LEAST one of the consultants scurrying around Washington these days for missile business is having success. He's Hugh Little, ex-vice president of Westinghouse Air Brake Co. and now Ohio chairman of the Association of Missile & Rocket Industries.

His secret: "I've never been known to take an admiral or general to lunch. About 25 people in the Pentagon handle 98 per cent of the bids for missilework, and they're not the brass." Mr. Little believes in the old fashioned philosophy of knocking on doors until he meets the right man.

He doesn't confine his activities to the Washington rat race either: "I take swings around the country to learn what major contractors and subcontractors are looking for. Chances are I'll have a vender or sub-subcontractor in mind when I approach a big outfit, but I have to be ready to fit its needs exactly. I let the job decide the supplier, not vice versa."

### New Buying Techniques Used

Mr. Little says an interesting situation develops in some firms after a contract is landed: The usual purchasing routes are bypassed. One man in a medium-sized company may buy all materials for missilework, and he most likely will not carry a purchasing agent's title. "You have to get inside a company to discover the right man." Salesmen planning missilework calls on their usual contacts will be disappointed; even the PA may not know who does the buying if the firm has an informal missile group within its formal structure.

Mr. Little represents a type you see more and more around Washington. With an engineering background and the interest to keep up with the times, he is applying salesmanship to the missile field. It's apparently working out for all concerned: The Pentagon, the prime contractor, and the subcontractor or sup-

plier. "Men like Mr. Little bring knowledge about a company's capabilities to the attention of the right person and end up handing over a contract on a silver platter. They also provide information about developments. If XYZ Inc.'s new process might fit a particular problem, chances are it will be a private consultant who brings it to the Defense Department's attention. They also are quick to hear of any bottlenecks. Mr. Little tells of the airframemaker who needed a bellows job quickly; the only company the prime contractor knew that could do the work had turned it down. A query to Mr. Little turned up another capable firm, although it hadn't even known about the contract.

### They Tie Up Loose Ends

The missile business seems to demand the talents of these consultants. On Capitol Hill, you hear constant complaints of constituents who are unable to learn exactly what's going on in missiles and where they can fit in. Better procurement procedures probably aren't the answer because developments are coming so fast that no mere organization can keep up with them: It takes these men who live missilework and who can, by the nature of their job, move around the country fast. They seem to be the fellows who are literally picking up the loose ends of our missile program. Eventually, the business will settle down, and the routine of purchasing and contracting will be as simple as it is in any other metalworking business. Today, it's the most exciting game on earth, says Mr. Little.

It takes "hard work and plenty of guts," he concludes, but the rewards are great. Production opportunities are limited now, but they will come for the firm willing to risk enough at first. How do you get on the inside of the business? By sticking close to the manufacturing leaders in missiles: They know about developments before the services do, Mr. Little advises.

### Uncle Sam Buys Russian Aluminum

Major U. S. aluminum producers told Commerce Secretary Sinclair Weeks: "The U. S. government recently purchased 1.25 million lb of aluminum plates on a competitive basis. The lowest bid, by a New York importer, was about 20 per cent below the average of all domestic bids. His source of supply is a Belgian mill which is a heavy purchaser of Russian aluminum. The U. S. government, nevertheless, awarded its order to this importer."

The aluminum producers have been making the rounds in Washington for several weeks with their complaints about Russian metal (STEEL, July 21, p. 77). The latest visit (last week) was to Interior Secretary Fred Seaton. Don't look for any formal action to come out of these conferences. Basically, the aluminum firms want Uncle Sam to concentrate on new markets abroad via the foreign development route, rather than formal restrictions on imports and tariffs.



## Scientific Apparatus Sales\*

(Millions of dollars)  
1958 . . \$300\*\*

1957 . . 330

1956 . . 281

1955 . . 232

1954 . . 203

1953 . . 212

\*Sales by laboratory apparatus, optical, and industrial instrument sections of the SAMA.  
\*\*Estimated by STEEL.



Boonton Radio Corp. made this device to measure structure of human and animal tissue

# Scientific Apparatus Down

Slowdown in capital spending is blamed for 10 per cent decrease in sales, but help is coming from two sources: Increases in defense and school outlays

REDUCED capital expenditures this year are expected to cause sales of scientific apparatus to drop about 10 per cent under 1957 levels, but the performance should still be the second best in the industry's history. Experts anticipate a 5 to 10 per cent recovery in 1959.

Estimates are that sales of laboratory apparatus and optical and industrial instruments will reach about \$300 million in 1958, vs. the record \$330 million sold last year by members of the Scientific Apparatus Makers Association.

**And More** — A second product group (for which sales statistics are unavailable) includes recorder-controllers, laboratory furniture, nautical and aeronautical instruments, and products made by nonmembers of SAMA.

Sales of laboratory equipment (including furniture, benches, and

hoods) are better than 10 per cent ahead of last year's, but those of recorder-controllers are behind expectations. The poor showing is blamed on the drop in capital expenditures which began last year and continued into this one. The outlook for relief in the form of increased capital spending is pessimistic.

**What's Coming Up** — Taking a look into the future, instrument makers are encouraged, says Kenneth Anderson, executive vice president of SAMA. Nuclear power, space stations, controlled weather, solar energy, and cures for "incurable" diseases all point to enlarged instrument markets.

"Perhaps one of the biggest jobs now is spelling out to the man on the street the value and practicality of basic science," Mr. Anderson continues. "We complain that only

8 per cent of all money spent for research and development goes for basic research (U. S. spending for R&D, including government outlay, is estimated to be about \$10 billion annually). Yet few, if any, nontechnically trained people, including the legislators and executives asked to pass on such appropriations, really know what basic research is."

**Some Help Coming**—As one of the industries most vitally concerned with missile, antimissile, and satellite research and production, some sections of SAMA should profit from a geared up defense program later this year. (Outlay for basic missiles will approach \$3 billion in 1958, with \$3.44 billion forecast next year.)

Mr. Anderson also adds that executives will turn to laboratory control, research, and small business automation as ways of lowering high costs of production, marketing, and distribution.

Makers of apparatus and scientific optical goods also hope to benefit from appropriations for improving U. S. science teaching facilities, but this hinges on Congressional decisions on pending legislation. Funds allocated to the National Science Foundation to promote science education will mean some business for the industry.

**Imports Hurt**—Imports are still hurting manufacturers of laboratory apparatus and optical instruments. Says the Commerce Department: Imports of laboratory balances and analytical weights rose from \$418,492 in 1956 to \$599,935 in 1957. Imported microscopes jumped from \$539,350 in 1956 to \$748,173 the following year. Imports of other scientific, laboratory, and professional instruments jumped from \$1,272,252 in 1956 to \$2,243,622 last year.

**Roundup** — Makers of scientific apparatus (about 1600 companies) catalog some 22,000 products and more than 15,000 chemical compounds. Equipment sales in 1957 of SAMA members were: Laboratory apparatus, \$195 million; optical instruments, \$18 million, and industrial instruments, \$117 million.

The Instrument Society of America is sponsoring its 13th annual Instrument-Automation Conference & Exhibit Sept. 15-19 in Philadelphia.



# Preventive Maintenance: Three

## Benefits from Scheduling

**PROBLEM:** A southwestern metalworker used nine vertical turret lathes to finish heavy steel forgings, a three-shift operation. Maintenance was strictly on a breakdown basis. No overhauls were planned; repair records were incomplete. Maintenance quality was secondary to speed.

**SOLUTION:** Management initiated a preventive maintenance program. The life expectancy of each major component was found by analyzing machine repair records. From that, this program was established: 1. Patrol inspections are made daily by the maintenance foreman. 2. Preventive maintenance inspections are made every 2000 hours. 3. Each machine is overhauled every 6000 hours. 4. Machines are rebuilt every 40,000 hours. 5. Lubrication is strictly scheduled.

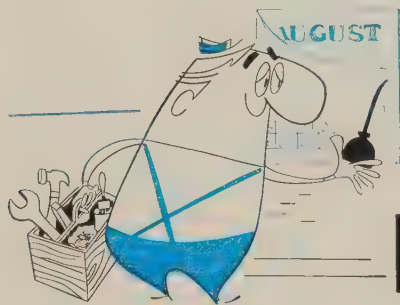
**RESULTS:** During the first six years, maintenance downtime was trimmed from 9 to 5 per cent of working time. Maintenance cost was slashed from \$2.10 per machine hour to \$1.48. Inventories of spare parts were cut one-third. More gains are in the making.

## Gets Clean Oil Fast

**PROBLEM:** Mechanization and automation bring lubrication problems. Rapid-fire operation demands steady and thorough lubrication—often at hard-to-reach places.

**SOLUTION:** Ford Motor Co.'s Cleveland Engine Plant installed a central dispensing system. Both lubricating and hydraulic oils are carried from a central store to machines via overhead piping (underground lines were not used because they would pose a condensation problem).

**RESULT:** The system provides a rapid method of getting clean oil to the right place. It saves a "considerable amount" of labor and eliminates spillage. It directs the oil to places difficult for a man carrying a bucket to reach. A "counter" in each department shows the amount of oil used. It also gives forewarnings: If a department uses more oil than it should, the cause is immediately sought. Oil leaks and oil burning are caught in their infancy (as are any other causes of lubricant waste).



# How To Make Maintenance

THE GENERAL MANAGER fumed. He had just learned that maintenance cost his plant \$2.50 per machine hour—an excessive outlay at a time of low income. That plant, like many others, could brighten its profit picture through preventive maintenance.

**Cost Cutter**—Now is the time to initiate (or improve) your program. It should be a prime target in any cost cutting drive. Putting equipment in shape now is economical because downtime costs less when production is low. By upgrading your system now, your plant (and your maintenance program) can be in top shape when business improves.

**Goal of preventive maintenance:** Increased production at lower unit cost by minimizing downtime, improving equipment efficiency, and abating overtime work through planned application of men, materials, and tools. Mechanization and automation intensify the need for preventive maintenance.

**Find the Problem**—Do you know your present maintenance costs? Can you measure the profit lost by downtime, or through customer dissatisfaction with late deliveries? A supplier of automotive parts couldn't; it asked Trundle Consultants Inc., Cleveland, to study its setup. A report showed the plant had: 1. No central control to analyze, approve, and release maintenance requests. 2. No measure of performance on

maintenance work. 3. No organized inspection of completed jobs. 4. No scheduled inspection of productive facilities. 5. No record of equipment location changes. 6. No effective schedule for maintenance work, and jobs were not analyzed before work began.

Such seat-of-the-pants maintenance resulted in erratic lubrication, ignorance of the condition of equipment (it was far worse than management realized), frequent production delays, and high costs. Maintenance men were on call to repair machines rather than on patrol to prevent repairs. A modern preventive maintenance program did the trick.

**Where To Start**—Preventive maintenance begins with the equipment manufacturer. He should use proper packing and shipping methods and assist the user with installation. An instrument maker puts photographs of proper unpacking procedures on the outside of shipping cartons. Some suppliers, like Reliance Electric & Engineering Co., Cleveland, and Vickers Inc., Detroit, run schools for customer maintenance men.

**How To Start**—George C. Bonnell, service manager, Machinery Hydraulics Div., Vickers Inc., tells how a southern metalworker started its program: "It accumulated reference data and service manuals on all machine tools and components. It set up a rigid inspection and lubrication schedule and standardized



# Success Stories

## Slashes Electronic Failures

**PROBLEM:** The growing use of electronic instruments and control equipment makes for expensive breakdowns due to electron tube failure.

**SOLUTION:** E. I. du Pont de Nemours & Co., Wilmington, Del., made a study of tube replacements. It found that a significant number fail during the first 200 hours of use (because of shorts, open heaters, and the like). It was conservatively estimated that 75 per cent of instrument failures during the first three months of use could be eliminated by stabilizing (aging) the tubes. A low cost rack was built to apply maximum rated plate voltage, current and dissipation, and filament voltages to 174 tubes at a time.

**RESULTS:** The failure rate on the rack ran 7 to 8 per cent. That means 70 out of 1000 tubes would have caused an instrument failure within 200 hours after installation had they not been rejected by stabilization. So downtime is reduced considerably and reliability improved markedly.

# Productive...

lubricants. It recorded service, repair, and replacement history and kept accurate records of maintenance costs for each piece of equipment. Then it analyzed repetitive failures and set up long range equipment rebuilding schedules. Routine work was scheduled, and control over stores was established."

Results: 1. Repair downtime was trimmed from 9 to 3 per cent of scheduled hours. 2. Emergency work declined from 85 to 20 per cent of total manhours. 3. The Saturday work force was cut from 300 to 35 men. 4. Only 16 maintenance employees were added (total, 369) over six years despite the addition of 200 more machine tools (total, 800).

**Keep Rolling**—At Globe Union Inc., Milwaukee, a complete inspection of major equipment is made every month. Four weekly schedules stagger assignments. Smaller machines are inspected periodically, and a detailed service record is kept.

**Tip** — "Statistics show incorrect lubrication — not enough, too much, wrong kind—causes 60 per cent of equipment failures," reports a Ford Motor Co. spokesman. Ford uses coded insignia at each lube point to the oiler what lubricant to use and how often.

*• An extra copy of this article is available until supply is exhausted. Write: Editorial Service, STEEL, Penton Bldg., Cleveland 13, Ohio.*

## 5 Steps to 'Productive' Maintenance

**1. Gather Data**—Set up a card inventory of all equipment. Each card should list the machine's number, its description, application, rating, manufacturer, vendor or agent, purchase order number, cost, and location. Index the cards.

**2. Exclude Noncritical Items**—You can "overmaintain." In some cases, it's more economical to replace or repair a part after it wears out rather than inspect it regularly. Such items (Example: An air conditioning motor) may not warrant being included in your program.

**3. Set Up Control System**—Work out an inspection schedule that strikes a balance between "too often" and "not often enough." Both extremes are costly. The repair record will tell whether more (or less) attention is needed. Written inspection reports go to the maintenance foreman. They will be analyzed to find material, labor, and time requirements for repair jobs. Manpower can be scheduled and parts requisitioned in advance.

Then set up your work order program for routine maintenance. For best results, tailor it carefully to your needs. (One plant trimmed emergency repair costs 23 per cent by redesigning its work order system—although it had appeared to be in good order.)

Keep records of all repairs. They'll serve as a guide in budgeting maintenance costs, in determining when equipment should be replaced, in figuring kind and amount of materials to stock, in finding design weaknesses, and in evaluating the frequency of inspections.

Ask your equipment suppliers to give you a list of renewal parts to stock. Use that as a base; experience will show whether it's the best quantity for you. Set up a standard inventory control system, make someone responsible for re-ordering, and watch out for costly duplication.

**4. Evaluate Importance**—Prepare a list of "vital" equipment (if idled, it would interrupt or delay production). Find the condition of all equipment on that list. Now you have to determine which special maintenance parts to stock as insurance against critical breakdowns. Here's how:

1. Calculate repair times if you have in stock:  
(a) No major parts. (b) Some major parts. (c) All major parts. (d) Complete unit.

2. Determine repair cost and inventory cost under each of those conditions.

3. Add the three items under each condition to see which is most economical. Example: One company found its failure cost on a 500 hp, slow speed, dc motor was \$180,730 with no major parts stocked but only \$31,350 with a complete armature in stock. Stocking the whole motor would cost more due to high inventory expense.

**5. Establish Program**—Schedule planned overhauls for all critical equipment; they take up far less time than the unplanned shutdowns they eliminate or minimize. Overhaul, not by machine, but by manufacturing operation. Consider retirement or replacement of each machine at this time.

Source: Adapted from a General Electric Co. booklet.





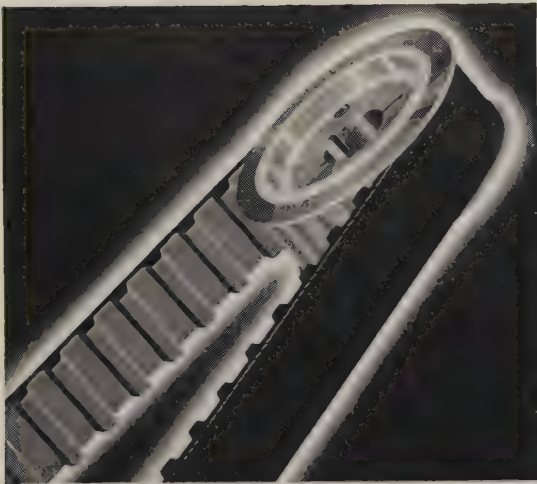
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UNITENSION V-BELTS

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**You get these extra advantages:** • Smaller, lower-cost motor • Short and fixed centers, high ratio • Reduces assembly costs because fewer units are needed.

**The housewife gains, too!** • She gains a lightweight, foolproof appliance a woman finds easy to handle, and free of the need for maintenance and service calls.

You get a product easy to demonstrate, easy to sell.



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They provide steady, dependable running on F.H.P. or multiple drives. The pulling members are electronically tensioned in perfect balance, *working as a team*—thereby increasing strength and decreasing vibration. This is the ideal belt for the mechanism that requires V-Belt power transmission.

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## Autodom's Questions for '59

### Production

Optimists say 6 million.  
Pessimists say 4.3 million.  
Best Guess Now: 5.5 million.

### Prices

How big a boost?  
Can some lines hold fast?  
What happens to dealers?

# Production Will Rise

Output of 1959 cars is expected to approach 5.5 million units. Automakers say they want to hold prices where they are, but it's unlikely that will be possible

HOW MANY CARS will Detroit build next year? Will they cost more?

There's enough talk and opinion around Detroit to make some fair guesses.

### Production—Up Slightly

Automakers figure the industry will build and sell 4.4 million cars this year, and the first official market forecast pegs 1959's sales at 5.2 million to 5.5 million. The estimate comes from General Motors Corp.'s Edward T. Ragsdale, Buick general manager. It includes import sales, which should hit at least 450,000 (vs. 385,000 this year).

If production follows the pattern of previous recovery years, car buildups should slightly exceed domestic sales (including imports). This year's reason: The industry plans to enter January with dealer inventories at around 500,000 units, compared with 640,000 at the beginning of 1958.

The low inventory position will call for heavier production during

the first half of 1959. Barring an unanticipated relapse, total output can push into the 5.2 million to 5.5 million range quite easily.

**Not All Agree**—That seems to be the middle of the road view. Even the most optimistic sales people won't plan above 6 million units (and admit that will take some doing). The eternal pessimists (mostly suppliers unable to get contracts) are convinced Detroit will be swamped by small cars, labor troubles, and apathetic shoppers who won't buy because they can't see the recession's end.

It's too early to predict how each company will fare, but Buick obviously is going after Oldsmobile and Plymouth. Olds production is accounting for about 7 per cent and Plymouth for 8 per cent of this year's output. Buick will hit about 6 per cent.

Mr. Ragsdale says Buick is scheduling initial production at 1500 cars daily. Based on a reasonably normal production year, this would be at least 8.5 per cent of a 5.5-million buildup. The GM division has

dropped its old series names and will introduce three new ones on Sept. 19: LeSabre (Special), Invicta (Super and Century), and Electra (Roadmaster and Limited).

### Prices: Some Will Hold

At Buick's press preview, Mr. Ragsdale said that even if Buick had hit standard volume this year, price increases on '58 cars still wouldn't have paid for the production costs on the model run.

Mr. Ragsdale might well be speaking for the industry when he says his division has established several price lists based on commodity and labor price increases but hasn't yet set prices. Mr. Ragsdale and James O. Wright, Ford Motor Co. vice president, have declared that prices will have to increase if labor costs rise.

**The Big If**—Even if the UAW finally agrees to extend the auto contracts, built-in cost of living and annual improvement factors will trigger wage increases of 9 cents per man per hour. Two months of contractless operations have saved the Big Three about \$8 million in escalator costs.

This year, automotive suppliers claim the industry is pushing hard to make them hold to 1958 prices, but already there's talk of some who have been allowed to pass on material cost increases (but not labor boosts).

**Bad Policy**—Several cost analysts

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## Roadtesting Rambler

WE'VE BEEN INTERESTED in AMC's Rambler American because it is the car most likely to compete with the smaller economy cars Ford, Chevrolet, and Studebaker-Packard have underway.

The American isn't a car to pile four people into and set off cross country—two, yes. The 100-in. wheelbase also makes for stiffer riding than we like for long distances. The coil and leaf springs give an adequate ride on paved roads, but there's plenty of jounce on gravel. A high center of gravity doesn't help cornering, and above 65 mph the car has a tendency to wander.

**Economical**—But let's face it, AMC designed it for economy, and we are particularly impressed with the results. We started with a full tank and after 401 miles of around-town driving took on 16.9 gallons of regular octane gas. On a 250-mi. trip, gas consumption was 24.2 mpg.

The 90-hp engine with 195.6 cu. in. displacement and 8:1 compression ratio has a lot of pep. Our test car has an automatic transmission and a 3.31:1 axle ratio. Casual checks indicate the car will move from 0-45 mph in 5.2 seconds.

The Rambler American Super carries an advertised list price of \$1874. The De Luxe is \$1789. Transportation, taxes, handling, and accessory charges will bring the total to about \$2100-\$2200.

have hold STEEL the industry could absorb some of the increases but hardly all. More important is that holding prices would tend to support Walter Reuther's charge that profits are higher than necessary.

Under those conditions, it looks like two things may happen: Prices will go up on volume lines, and dealer cost-price setups will be slightly revised.

It could work like this, says one marketing man: In divisions which can't absorb any more cost increases, the heavy selling lines will be marked up. Low volume styles and higher priced series will be left unchanged.

The boost won't be much (some sources think \$30 to \$40), but it will be enough to carry losses suffered in other series.

**Dealers Juggle**—Another possibility is that prices to dealers will go up, but suggested dealer list prices will not. This means an automatic cut in the traditional 24 to 25 per cent dealer markup. One hint this may be coming: The 3 per cent cut in transportation excise taxes is being passed along to dealers by car-makers. This would just about compensate for any increase in price dealers may have to pay. It would mean suggested prices could be left alone or upped only a few bucks.

As usual, the dealer will have to make his profit on accessories, and they will get a real boost. Prices of dealer installed accessories don't have to be posted under the new price labeling law.

## Chrysler Gets Small Car

Chrysler Corp. has entered the small car market by buying 15.2 per cent interest in the French Simca firm from Ford Motor Co. L. L. Colbert, Chrysler president, says his company now has sole distribution rights in this country and Canada.

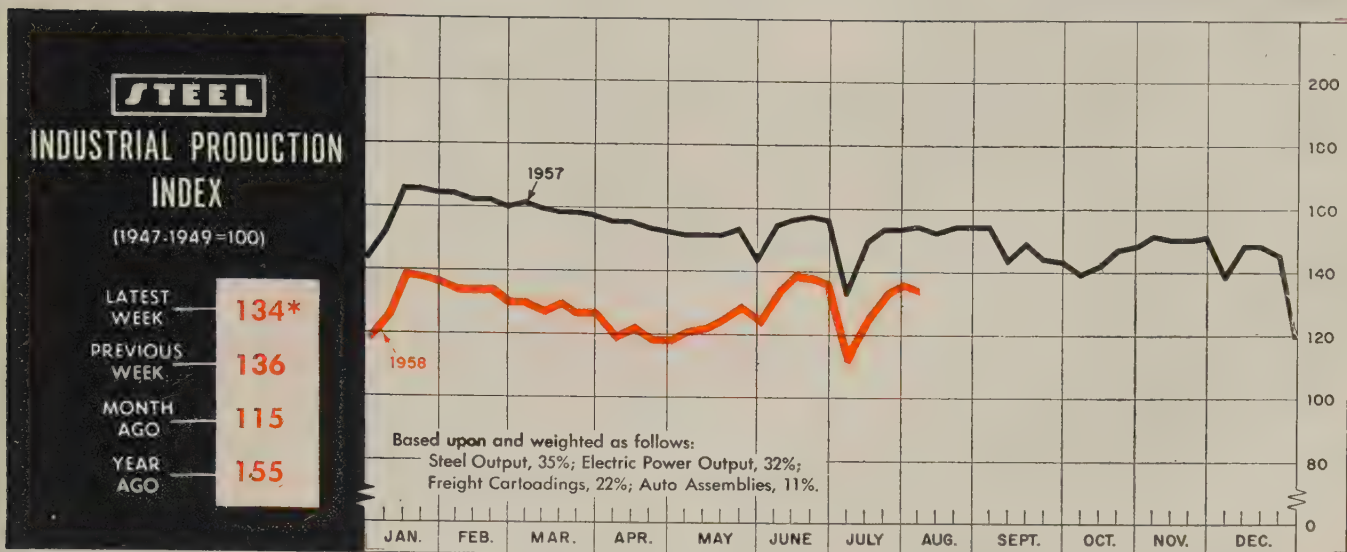
Simca builds 4 and 8 cylinder cars on 96 and 106 in. wheelbases. It also has 54 truck models and makes tractors and farm equipment. Mr. Colbert says this country has 600 Simca dealers—40 per cent are expected to also handle Chrysler lines. More Chrysler dealers will probably get franchises.

## U. S. Auto Output

	Passenger Only 1958	1957
January .....	489,357	642,090
February .....	392,112	571,098
March .....	357,049	578,826
April .....	316,503	549,239
May .....	349,474	531,365
June .....	337,355	500,271
6 Mo. Total	2,240,850	3,372,889
July .....		495,629
August .....		524,354
September ....		284,265
October .....		327,362
November ....		578,601
December .....		534,714
Total .....		6,117,814
Week Ended	1958	1957
July 5 .....	35,273	73,682
July 12 .....	73,062	111,943
July 19 .....	85,533	117,205
July 26 .....	85,519	119,857
Aug. 2 .....	61,908†	119,323
Aug. 9 .....	49,000*	118,864

Source: Ward's Automotive Reports.  
†Preliminary. \*Estimated by STEEL.





\*Week ended Aug. 2.

## Economy Weathers Cutbacks in Autos

AUTOMAKERS are lowering the curtain on another model year, but don't expect business to take a long, leisurely intermission until the next act begins. A 28 per cent reduction in auto output between the weeks ended July 26 and Aug. 2 caused only a moderate ripple in STEEL's industrial production index. Other factors continued to gain strength.

The index declined 2 points in the week ended Aug. 2 to a preliminary 134 (1947-49=100). Model changeovers accounted for sharp drops in auto production, and output will remain low until early September. But STEEL's index is expected to hold comfortably above the second quarter lows. Here's why:

**Steel's Stronger**—Last week, steel output rose to an estimated 1,611,000 tons, reports the American Iron & Steel Institute. (June had been the only month this year in which weekly production topped 1.6 million tons. Price hedge buying was an influence then.) It was the fifth weekly gain in a row. Slowdowns in Detroit won't cut into production during August. Steel will be made for '59s this month.

**Power Output Gains** — Electric energy distributed in the week ended July 26 totaled 12.3 billion kw-hr, reports the Edison Electric Institute, New York. Power output has climbed steadily since the July 4

holiday and is slightly higher than the year-ago mark.

**Carloadings Rise**—Carloadings increased by 4.4 per cent in the week ended July 26, the Association of American Railroads, Washington, reports. Loadings of revenue freight totaled 607,701 cars.

Loadings have gained each week

since early July. Significantly, almost all commodities shared in the increase. Although livestock loading declined moderately, coal, miscellaneous freight, grain, forest products, and ore loading were on the uptrend.

July advances kept STEEL's production index above second quarter

### BAROMETERS OF BUSINESS

#### INDUSTRY

	LATEST PERIOD*	PRIOR WEEK	YEAR AGO
Steel Ingot Production (1000 net tons) <sup>2</sup>	1,611 <sup>1</sup>	1,561	2,043
Electric Power Distributed (million kw-hr)	12,300 <sup>1</sup>	12,319	12,474
Bituminous Coal Output (1000 tons)	7,910 <sup>1</sup>	7,640	10,120
Crude Oil Production (daily avg—1000 bbl)	6,550 <sup>1</sup>	6,535	6,843
Construction Volume (ENR—millions)	\$388.0	\$455.4	\$401.0
Auto, Truck Output, U. S., Canada (Ward's)	80,935 <sup>1</sup>	107,941	140,253

#### TRADE

	LATEST PERIOD*	PRIOR WEEK	YEAR AGO
Freight Carloadings (1000 cars)	610 <sup>1</sup>	608	740
Business Failures (Dun & Bradstreet)	264	279	228
Currency in Circulation (millions) <sup>3</sup>	\$31,086	\$31,217	\$30,909
Dept. Store Sales (changes from year ago) <sup>3</sup>	+2%	+2%	+4%

#### FINANCE

	LATEST PERIOD*	PRIOR WEEK	YEAR AGO
Bank Clearings (Dun & Bradstreet, millions)	\$21,657	\$23,280	\$20,871
Federal Gross Debt (billions)	\$275.9	\$275.8	\$272.8
Bond Volume, NYSE (millions)	\$27.3	\$24.9	\$16.1
Stocks Sales, NYSE (thousands of shares)	18,760	18,581	8,873
Loans and Investments (billions) <sup>4</sup>	\$93.8	\$94.2	\$86.2
U. S. Govt. Obligations Held (billions) <sup>4</sup>	\$32.1	\$32.2	\$25.2

#### PRICES

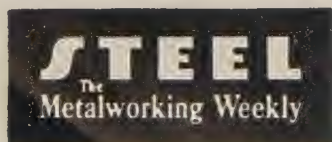
	LATEST PERIOD*	PRIOR WEEK	YEAR AGO
STEEL's Finished Steel Price Index <sup>5</sup>	239.15	239.15	239.15
STEEL's Nonferrous Metal Price Index <sup>6</sup>	199.4	198.6	216.8
All Commodities <sup>7</sup>	119.4	119.3	117.9
Commodities Other than Farm & Foods <sup>7</sup>	126.0	126.0	125.5

\*Dates on request. <sup>1</sup>Preliminary. <sup>2</sup>Weekly capacities, net tons: 1958, 2,699,173; 1957, 2,559,490. <sup>3</sup>Federal Reserve Board. <sup>4</sup>Member banks, Federal Reserve System. <sup>5</sup>1935-39=100. <sup>6</sup>1936-39=100. <sup>7</sup>Bureau of Labor Statistics Index, 1947-49=100.

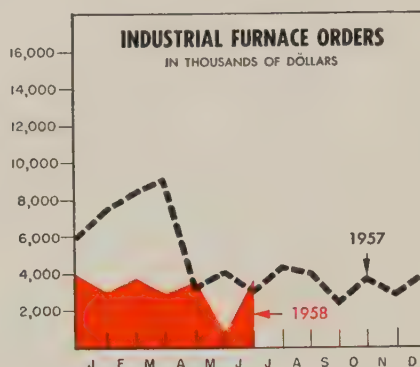


# TO FIND THE MAN YOU NEED ...

Place an advertisement in the "Help Wanted" columns of STEEL's classified pages. Your advertisement will reach the qualified men you need, because STEEL is addressed to highly-trained men in all phases of metalworking

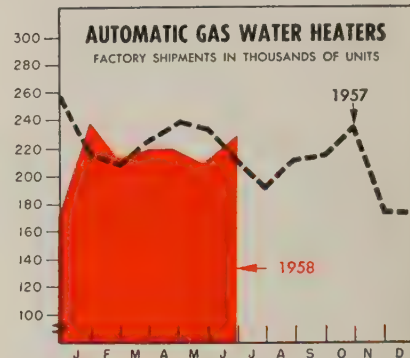


## THE BUSINESS TREND



	1958	1957	1956
Jan.	3,045	7,380	10,244
Feb.	3,684	8,373	12,163
Mar.	2,871	9,090	7,025
Apr.	3,572	3,164	8,803
May	953	3,994	3,667
June	3,672	2,974	4,748
July	4,332	4,140	
Aug.	3,924	6,722	
Sept.	2,337	3,057	
Oct.	3,621	8,741	
Nov.	2,832	3,986	
Dec.	3,992	5,858	

\*Not including new orders for steel mill furnaces.  
Industrial Heating Equipment Assn. Inc.  
Charts copyright, 1958, STEEL.



	Shipments—1958	Units—1957	1956
Jan.	235,100	214,900	239,000
Feb.	216,300	208,200	259,200
Mar.	221,600	226,600	267,500
Apr.	222,700	238,200	241,200
May	209,100	233,400	244,300
June	228,100	211,700	251,500
July	192,500	231,900	
Aug.	210,300	243,500	
Sept.	215,500	218,100	
Oct.	234,700	224,700	
Nov.	173,300	184,400	
Dec.	172,700	156,800	

Totals ... 2,532,000 2,762,100  
\*Preliminary.  
Gas Appliance Mfrs. Assn.

lows, but the extent of the anticipated third and fourth quarter recovery depends largely on the consumer. His reluctance to buy durable goods early this year stifled industrial activity. Statistics on savings show the average American has ample money to spend, although prices are rising.

Several business observers think improvement in the business climate and fear that goods will cost more in future will encourage the buyer to increase his spending. The Labor Department adds another encouraging report. Its bimonthly surveys of manpower show the employment situation steadied in late spring despite an influx of students and other summer job seekers.

**Machinery Demand Steady** — Another favorable factor in the outlook for the second half: The decline in orders for machinery has halted. The decline in investment for new plant and equipment should also end soon, although there's no indication of a gain in this segment of metalworking.

## Earnings Turn Up

The average factory worker had more money to spend in June because of a lengthened workweek, re-

ports the Labor Department. After deduction of income and Social Security taxes, spendable earnings of a worker with three dependents reached a high of \$75.55 per week. He had \$73.67 to spend in April, \$74.51 in May.

Price hikes partially offset the increases, but buying power went up almost 1.5 per cent between May and June.

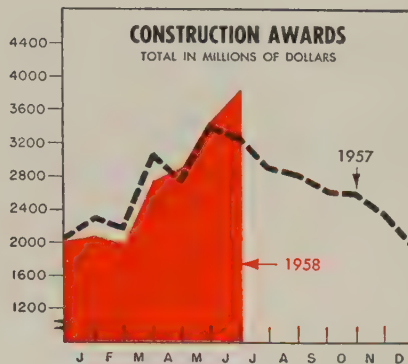
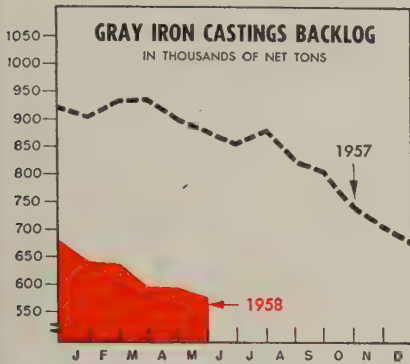
## Sales Are Rising

Sales statistics are additional evidence that the recession passed its low point in April and May and industry began to recover in June.

Says the Commerce Department: "Sales and new orders advanced from May to June. Backlogs of unfilled orders continued to decline but at a more moderate pace than in recent months. There was substantial liquidation of factory inventories in June, and stock-sales ratios were reduced for the third successive month."

The department reports sales by manufacturers in June were 2 per cent above May's. Almost all major component industries contributed to the 3 per cent rise in durable goods. Nondurable goods advanced by 1 per cent.





	Shipments		Unfilled Orders*	
	1958	1957	1958	1957
Jan. ....	868	1,213	638	905
Feb. ....	753	1,103	632	931
Mar. ....	796	1,133	590	935
Apr. ....	807	1,120	582	899
May ....	820	1,112	570	880
June ....	1,058	...	853	...
July ....	954	...	880	...
Aug. ....	1,076	...	826	...
Sept. ....	990	...	805	...
Oct. ....	1,100	...	740	...
Nov. ....	940	...	705	...
Dec. ....	864	...	676	...
Total ...	12,663			

\*For sale, U. S. Bureau of the Census.

	Total		Building	
	1958	1957	1958	1957
Jan.	2,066.1	2,299.6	1,536.2	1,730.7
Feb.	1,953.4	2,161.0	1,478.1	1,695.5
Mar.	2,721.2	3,078.0	2,037.7	2,199.7
Apr.	2,881.0	2,776.4	2,198.0	2,069.7
May	3,402.6	3,399.5	2,470.3	2,416.8
June	3,819.6	3,243.5	2,340.3	2,341.5
July	2,900.7	2,247.6	2,247.6	2,247.6
Aug.	2,818.0	2,291.8	2,291.8	2,291.8
Sept.	2,624.9	2,092.2	2,092.2	2,092.2
Oct.	2,613.8	2,075.6	2,075.6	2,075.6
Nov.	2,370.7	1,808.5	1,808.5	1,808.5
Dec.	1,982.3	1,457.5	1,457.5	1,457.5
Totals	32,268.4	24,427.1		

F. W. Dodge Corp.

New orders placed with manufacturers in June totaled about \$26 billion. That's an advance of 1 per cent from May, after seasonal allowances.

## Appliances Gain

Signs of an upswing in appliance buying continue to appear. The Gas Appliance Manufacturers Association Inc., New York, reports shipments of gas-fired water heaters reached a preliminary 228,100 in June, nearly 10 per cent higher than the figure for the previous month and 8 per cent above the June, 1957, mark.

Demand for domestic gas ranges improved moderately in June. Shipments reached 152,000 units, compared with 147,300 in May.

## Construction: Still Firm

Heavy construction slowed moderately in the last week of July, but it is still 6 per cent better off than it was last year.

Contract awards came to \$388 million in the week ended July 31, bringing the year's sum to \$12.1 billion, reports *Engineering News-Record*. This year is topped only by 1956.

## Foundry Backlog Slides

Foundries aren't doing as well as steelmakers on the sales front, Commerce Department reports show. While shipments of gray iron castings in May amounted to 820,000 tons, 2 per cent above April deliveries, unfilled orders at the end of the month were down from April's and 35 per cent below those in May, 1957.

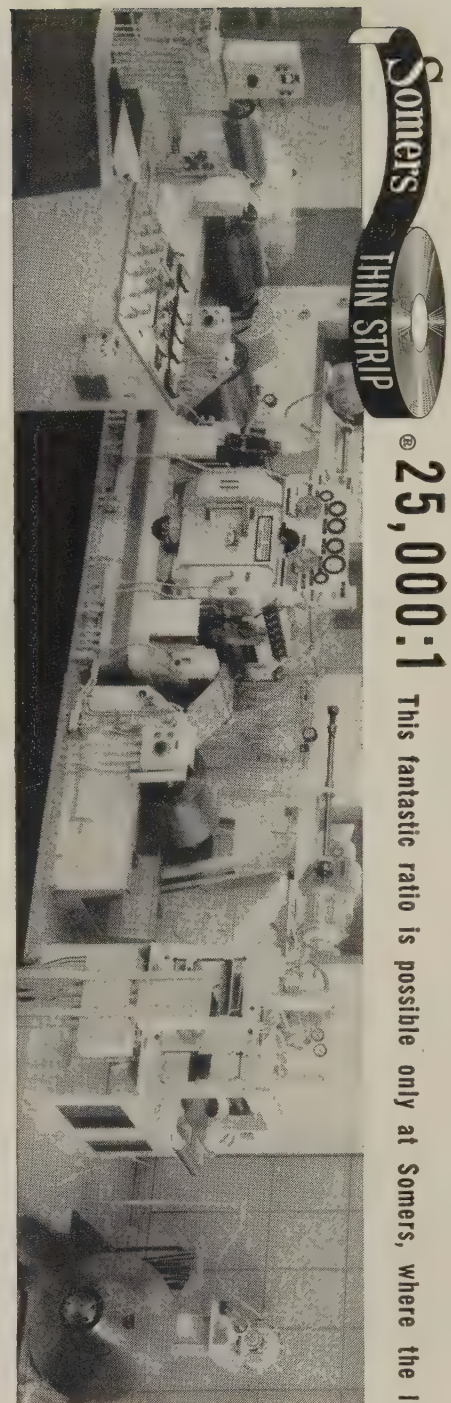
Shipments of malleable iron castings dropped 5 per cent in May, as order backlog fell 42 per cent below the previous year's level.

Deliveries of steel castings in May were 5 per cent below April's. Unfilled orders were 58 per cent below what they were on May 31, 1957.

## Trends Fore and Aft

- The American Gear Manufacturers Association, Washington, reports sales climbed in June. The association's index reached 173.8 in that month, compared with 142.2 in May (1947-49=100).

- Shipments of steel shipping barrels and drums in May were 6 per cent above April's but 15 per cent below those in May, 1957, reports the Department of Commerce. Deliveries came to 2,732,000 units.



**Somers**  
**THIN STRIP**

**25,000:1**

This fantastic ratio is possible only at Somers, where the latest equipment produces thin strip down to .001", as wide as 25".

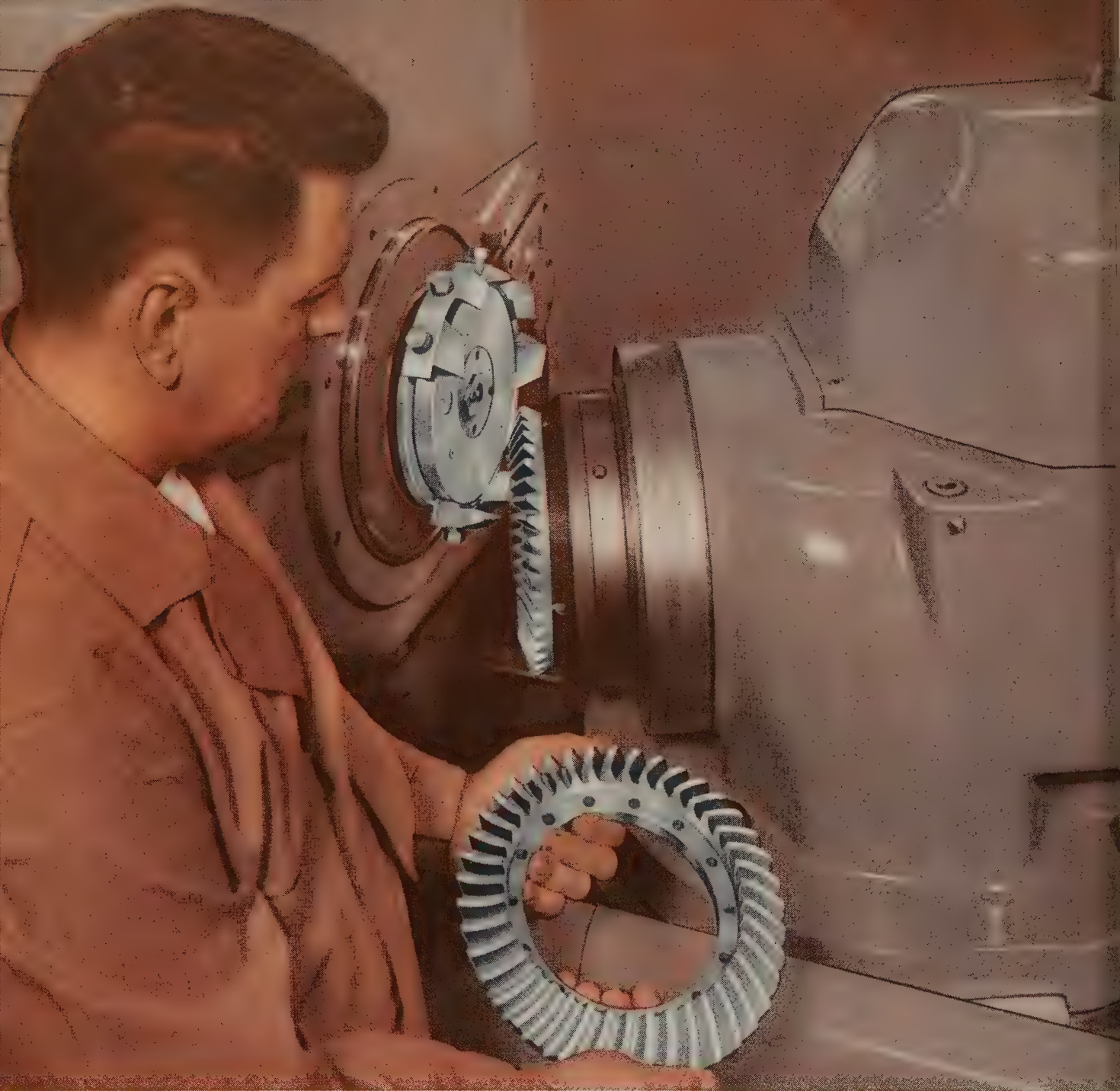
With the installation of one of the largest Sendzimir mills in the non-ferrous industry, Somers is prepared to meet the broadest range of dimensional specifications, since it is already supplying thin strip down to .0001" in narrower widths.

Pure Nickel, Monel, Inconel and Inconel "X" are produced in gauges from .0001" to .020". Stainless Steel, electrolytic Copper and its alloys, such as Brass, Nickel Silver and Phosphor Bronze from .0001" to .010".

For a complete survey of your strip problems at no cost or obligation, write for field engineer or Confidential Data Blank.

**Somers Brass Company, Inc.**  
104 Baldwin Ave. Waterbury, Conn.





## Helixform\*—a new method for bevel gear production!

The new No. 112 Hypoid Helixform Gear Finisher assures improved quality and increased production on spiral bevel and hypoid non-generated ring gears up to  $10\frac{1}{2}$ " in diameter, and  $2\frac{1}{2}$  DP such as employed in passenger car axles.

The Helixform Cutting Method used on this machine offers these advantages:

*Conjugate tooth surfaces, minimized gear development, complete control of tooth bearing, and greater adjustability in final assembly.*

We will be glad to send a bulletin giving further details on request. Ask for literature on the No. 112 Hypoid Helixform Gear Finisher and the companion No. 112 Hypoid Gear Rougher. Write for it today.

\*Trade-Mark



# GLEASON WORKS

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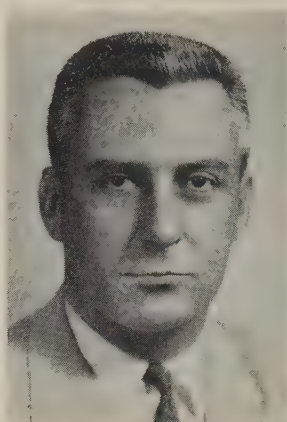




**WILLIAM F. CRAWFORD**  
Republic Flow Meters pres.



**DUANE R. BRANAKA**  
Valvair sales manager



**HARRY J. DEMPSEY JR.**  
Easton Car sales manager



**AVERY C. ADAMS**  
to be J&L chairman

William F. Crawford was elected president, Republic Flow Meters Co., Chicago, subsidiary of Rockwell Mfg. Co. James D. Cunningham was elected chairman. Mr. Crawford is also president of Edward Valves Inc., and Valve Products Inc., both Rockwell subsidiaries.

Duane R. Branaka was appointed sales manager of Valvair Corp., affiliate of Sinclair-Collins Valve Co., Akron. He was Detroit district sales manager for Warner Electric Brake & Clutch Co.

Thomas J. Moore Jr. was appointed general sales manager, Tuthill Spring Co., Momence, Ill. W. R. Walker was appointed manager of original equipment sales; Don Nelson, manager of replacement spring sales.

E. N. Smith was appointed technical director of Kennametal Inc.'s chemical and metallurgical laboratory in Latrobe, Pa. For the last five years, he has been metallurgical superintendent in charge of refining, powder preparation, and sintering operations.

Kenneth W. Meytrott was elected chairman, Ettco Tool & Machine Co. Inc., Brooklyn, N. Y. Edward G. Maylinger was elected president.

J. M. Moon was elected executive vice president, Signode Steel Strapping Co., Chicago. He continues to direct sales activities.

George M. Howser was appointed manager of aluminum sales, Rolled Steel Corp., Skokie, Ill.

Harry J. Dempsey Jr. was made sales manager, Easton Car & Construction Co., Easton, Pa. He was formerly manager of the New York district, handling regional and export sales.

Ray T. Winterringer was named superintendent, electrical department, at Republic Steel Corp.'s South Chicago steel plant. He succeeds the late L. A. Wynd. Frank J. Zupancic succeeds Mr. Winterringer as assistant superintendent.

Thomas W. Pettus was appointed president of Scullin Steel Co., division of Universal Marion Corp., St. Louis. Former executive vice president, he succeeds Edward F. Judge, retired.

Thomas P. Wagner was named president, Standard Steel Specialty Co., Beaver Falls, Pa. He succeeds James B. Jamison, now chairman. Mr. Wagner, who joined the company in 1950 as vice president and treasurer, also is president of Superior Drawn Steel Co., Monaca, Pa.

Fremont Fisher joined Electric Auto-Lite Co., Toledo, Ohio, as general sales manager, electrical products group. A. N. Kaiser was made chief engineer for the group's enlarged Syracuse, N. Y., division engineering facilities.

Arthur I. Mendolia was named assistant general manager, electrochemicals department, E. I. du Pont de Nemours & Co. Inc., Wilmington, Del. He succeeds W. Samuel Carpenter III, who became general manager, international department.

Avery C. Adams, president of Jones & Laughlin Steel Corp., Pittsburgh, will succeed Adm. Ben Moreell as chairman on Oct. 1. Admiral Moreell retires on that date, but will continue as a director and a member of the executive committee. Mr. Adams will retain the offices of president and chief executive officer.

Donald J. Wolfe was named manager of metallurgical sales for the engineering and construction division of Southwestern Engineering Co., Los Angeles. He will direct sales for the Krupp-Renn process, for which Southwestern is exclusive U. S. licensee.

William H. Searles fills the new post of manager of the market research department at Bunting Brass & Bronze Co., Toledo, Ohio. He was with Reynolds Metals Co.

William E. Geidt, advertising manager, Inland Steel Co., Chicago, was made assistant sales manager, sheet and strip division. He replaces John B. Judkins, who was made assistant manager, tin plate and export sales division. Richard F. Killelea succeeds Mr. Geidt.

B. R. Pinney was elected president, Copco Fabricated Products Div., Detroit, Copco Steel & Engineering Co.

Sid Mitwol was made general manager, rectifier division, Sel-Rex Corp., Nutley, N. J.

Donald R. Spatz was made vice president-sales for Pesco Products Div., and Wooster, Ohio, Div., Borg-Warner Corp. He was gen-





**IRA M. SLATER**

*P. R. Mallory vibrator division posts*

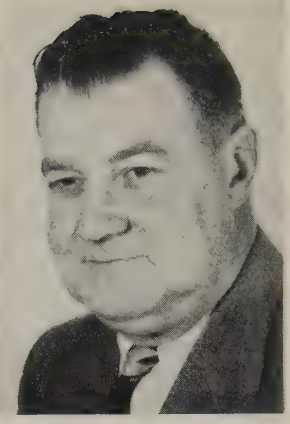


**FRED H. LARRABEE JR.**



**GEORGE M. MUSCHAMP**

*Minneapolis-Honeywell products group changes*



**O. B. WILSON**

eral sales manager, Pesco Products Div., Cleveland.

Ira M. Slater, former sales manager of P. R. Mallory & Co. Inc.'s vibrator division, Du Quoin, Ill., was made manager, sales engineering, for the division. Fred H. Larrabee Jr. was made the division's sales manager. He was vice president of Fred H. Larrabee Co., manufacturers' representatives in Kansas City, Mo., and St. Louis, before joining Mallory in June.

Harrison R. MacLeod was appointed chief engineer of Colson Corp.'s new Jonesboro, Ark., plant. He joined Colson in 1954, and has served as methods engineer.

Monarch Aluminum Mfg. Co., Cleveland, appointed Russell A. Lawson, former vice president-sales, to the new office of vice president-marketing. Walter V. Tracy, former assistant general sales manager, commercial castings division, was made general sales manager of the commercial division.

Minneapolis - Honeywell Regulator Co., Minneapolis, announces organizational changes for its industrial products group: George M. Muschamp was made group vice president-engineering; O. B. Wilson, group vice president-marketing; R. L. Mallory fills the new post of sales manager. John M. Wilson was named director of engineering, relieving Mr. Muschamp of direct responsibility for Brown Instrument Div.'s engineering department. J. A. Robinson was made Brown sales manager; Howard J. MacDonald, general manager, valve division; H. Earl Benson, sales manager, Rubicon Div.

Roy F. Coppedge Jr., executive vice president, was elected president of National Distillers & Chemical Corp., New York. He succeeds John E. Bierwirth, elected chairman.

James F. Smith was named manager of Anaconda Aluminum Co.'s reduction works at Columbia Falls, Mont. He succeeds Howard G. Satterthwaite, retired. Mr. Smith

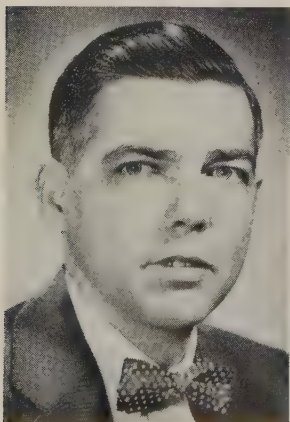
has been general superintendent of the plant since 1952.

Arch R. Young was promoted to assistant manager of purchases at Talon Inc., Meadville, Pa. He succeeds R. C. Straw, who is nearing retirement, and will now handle certain purchasing assignments.

Paul A. Garrison was made sales manager, engineering products section, special products division, I-T-E Circuit Breaker Co., Philadelphia.

Walter A. Anderson was elected president of Denton & Anderson Co., Huntington Woods, Mich., manufacturers' representative for Taylor - Winfield Corp., Warren, Ohio; Ohio Seamless Tube Div., Copperweld Steel Co., Shelby, Ohio, and Induction Heating Corp., New York. Denton & Anderson is also the owner of Taylor-Winfield, of which Mr. Anderson has been executive vice president since 1912.

Joseph T. Miller Jr. was appointed manager of bearing sales for Hoover Ball & Bearing Co., Ann Arbor,



**HARRISON R. MACLEOD**

*Colson chief engineer-Ark.*



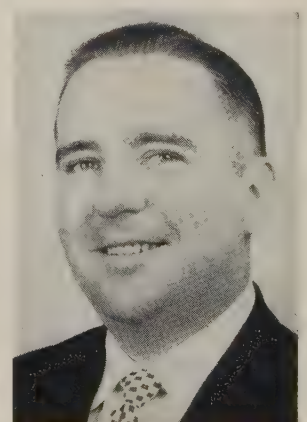
**RUSSELL A. LAWSON**

*Monarch v. p.-marketing*



**JAMES F. SMITH**

*Anaconda reduction works mgr.*



**JOSEPH T. MILLER JR.**

*Hoover Ball Bearing sales*



Right—Tight coil being opened. Note separator string being threaded into the coil.

Below—Separator string being removed from coil.

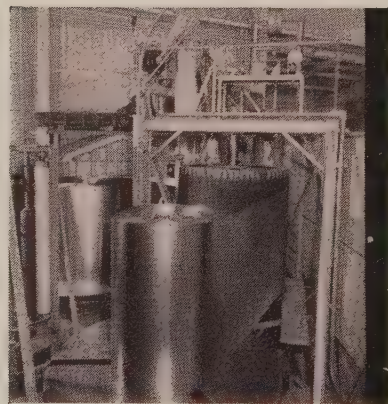
# here it is...

the revolutionary opened coil annealer, designed by **Lee Wilson**  
...it will substantially reduce costs  
of annealing steel



*Methods of opening and handling  
opened coils, heart of New System*

Lee Wilson engineers have developed a method for opening and handling opened coils that makes it possible to expose from 200 to 1000 times the area to heat. This means a faster, more uniform anneal. The new system, further, drastically reduces the expensive process inventory required in the annealing operation. There are many other important advantages to this revolutionary new system. Be sure you have all the facts. Write today for your copy of the Opened Coil Annealer brochure that explains the system in detail.



Opened coil being rewound into a tight coil after annealing.

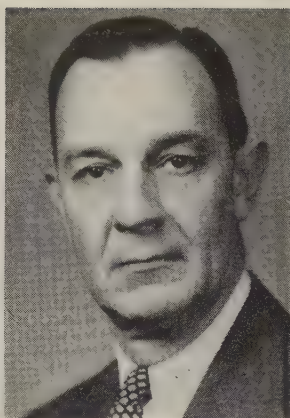
**Lee Wilson**<sup>\*</sup>  
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HIGH PRODUCTION ANNEALING SYSTEMS  
MAKE THE BEST METALS BETTER

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W. B. QUAIL



W. S. NEWELL



L. H. JUENGLING



J. S. THOMAS



R. F. KUHNLEIN

Armco Steel executive appointments

Mich. He was assistant sales manager in charge of OEM sales.

Moreton Price was made director of sales and contracts for AC Spark Plug Div., Milwaukee, General Motors Corp. He succeeds J. W. Stack, resigned.

Hooker Chemical Corp., Niagara Falls, N. Y., elected as senior vice presidents Frank W. Dennis, Dr. Earl L. Whitford, and Robert E. Wilkin. John S. Coey was elected vice president, eastern chemical sales.

Harry L. Harner was appointed western regional sales manager, Alloy Tube Div., Carpenter Steel Co. He is at Los Angeles. Mr. Harner was Pacific Northwest sales representative for the division.

Jones & Laughlin Steel Corp. named W. E. Porter an additional assistant district sales manager, New York; Smith Wilson, assistant district sales manager, Pittsburgh; W. W. Jones, assistant to the Cleveland district sales manager; E. Ross Nelson, an additional assistant district sales

manager, Detroit; James C. Mourkas, assistant manager, tin mill products division.

M. W. Hanner was made southeastern district manager, Capewell Mfg. Co. He is in Atlanta. Kenneth J. Wilson was made sales engineer in the Richmond, Va., area.

William T. Wilbur was made chief engineer, Progressive Welder Sales Co., Pontiac, Mich. Stephen E. Jerome was named factory manager.

Fred Spiegl, founder and former executive vice president, Titanium Fabricators Inc., Burbank, Calif., was elected president.

Louis C. Hoier succeeds Stephen J. Sferra, retired, as superintendent, coupling department, Youngstown Sheet & Tube Co.'s Campbell Works.

Vincent S. Burger was appointed manager of alloy and carbon sales for Green River Steel Corp., Owensboro, Ky., subsidiary of Jessop Steel Co. He was special representative-alloy products.

Executive changes at Armco Steel Corp., Middletown, Ohio, are: L. T. Johnston, vice president - sales, elected executive vice president, with increased general staff duties in addition to responsibilities for sales of both steel divisions and four subsidiaries; W. B. Quail, general sales manager - Armco Div., and W. S. Newell, general sales manager-Sheffield Div., elected vice presidents in charge of steel sales in their respective divisions; L. H. Juengling, vice president - operations, Sheffield Div., transferring to general headquarters in charge of purchasing and traffic; J. S. Thomas, director of purchases, assuming added responsibilities as general director of purchases for the company. R. F. Kuhnlein was elected vice president-Sheffield Div. He is succeeded as works manager, Kansas City, Mo., by R. C. Rhoades. E. H. Thorsteinson, vice president-controller, National Supply, was made assistant to Armco's president. C. W. Beck, manager of raw materials purchase, was elected director of purchases, Armco Div.

Reaction Motors Div., Denville, N. J., Thiokol Chemical Corp., appointed Richard P. Frazee director of sales and service; Harris D. Gilbert, manager of contracts.

Charles J. Jacobus was appointed chief engineer for Yale & Towne Mfg. Co.'s Trojan tractor shovel line, Batavia, N. Y. He was product engineer, construction machinery division, Clark Equipment Co.

## OBITUARIES...

William D. Goad, 43, manager of specialty project sales for Tube Reducing Corp., Wallington, N. J., died July 11.

Wallace T. Gray, 57, plant manager, Brush Instrument Div., Clevite Corp., Cleveland, died Aug. 2.

Wilfred E. Tabb, 65, former production manager for Motch & Merryweather Machinery Co., Cleveland, died July 27.

Brinkman D. Cronan, 53, partner and cofounder of Toledo Abrasive & Supply Co., Toledo, Ohio, died July 21.



**Every fastener we make is statistically quality controlled**...even though made in the millions. Only the most modern methods and equipment are used. When you ask for Lamson fasteners - whether standards or specials - you know you're getting the very best. Men who make decisions involving company money have come to expect and depend on this kind of product from us.



## **The Lamson & Sessions Co.**

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# Carborundum Builds

**\$6-million plant at Niagara Falls, N. Y., will turn out grinding wheels. More facilities planned**

CARBORUNDUM CO., Niagara Falls, N. Y., will build a \$6-million plant on Buffalo Avenue, that city, for the manufacture of 4 to 14 in. grinding wheels.

Although the plant will not be fully automatic, it will feature important special automatic and semi-automatic equipment. An indication of the production rate: One machine will do six operations in automatic sequence, turning out a cup wheel 4 in. in diameter every 17 seconds.

**Benefits**—Gen. Clinton F. Robinson, president, says that with full allowance for amortizing the cost of the project, the facility will lower production costs, improve the quality of grinding wheels, and make it possible to duplicate wheel dimensions for repeat orders.

Authorization for the project followed union acceptance of new contract provisions which make it practical to invest substantial capital in the Niagara Falls area. The company plans to add other facilities (cost, \$4 million) for the manufacture of vitrified products.

## Buys Electronics Div.

Mandrel Industries Inc., Houston, purchased the Electronics Div. of Hall-Scott Inc., Burbank, Calif., subject to approval of Hall-Scott shareholders.

## New Firms Organized

Pyrometer Co. of America has been organized at 600 E. Lincoln Highway, Pennel (Philadelphia), Pa. The firm will make pyrometric accessories. Officers are: President, John V. Metzger; vice president, Leonard Bonn; sales manager, C. J. Smolinske; and chief engineer, E. R. Stroik.

Air Heaters Inc. has been formed by Arthur A. Olson, Youngstown, president; T. F. Schilling, Elyria, Ohio, treasurer; John Wehmhoff, Elyria, secretary; and Lee Wilson, Cleveland, member of the board of directors. The firm will design and

construct heating systems and will maintain offices in Youngstown and Elyria.

A new company, Ceramics for Industry Corp., is manufacturing a wide variety of precision ceramic parts and composites in a 15,000 sq ft plant on Cottage Place, Mineola, N. Y. R. F. Doran is executive vice president.

## New Refractory Plant

Walsh Refractories Inc. will construct a plant in St. Louis for the manufacture of fusion cast refractories used in glassmaking. The plant, says A. J. Tomasek, president, will cost more than \$1 million and is expected to be in operation by early 1959.

## Merrill Is Adding Space

Merrill Mfg. Corp., Merrill, Wis., is adding 60,000 ft to its facilities. F. E. Taylor, president, says one of the plants will be sold as soon as the company occupies its new quarters.

## Installs Vacuum Furnace

Stainless Processing Div., Wall Colmonoy Corp., Detroit, has installed a 32-in. vacuum furnace for degassing, annealing, and brazing. The division also announces development of a new nickel-base brazing alloy (Nicrobraz 50) containing chromium and phosphorus for high temperature service.

## Opens Hydrogen Plant

Linde Co., a division of Union Carbide Corp., New York, is producing high-purity hydrogen at a new plant at Linden, N. J. The plant was built on land leased from General Aniline & Film Corp. which will supply crude hydrogen for processing at the Linden plant.

## Steel Company Formed

Southern Steel Service Co. Inc. (2040 N. Rio Grande Ave., Orlando, Fla.) has been formed by Henry W. Doctor, former sales manager and head of alloy and stainless steel engineering in the Midwest for Babcock & Wilcox Co. The firm will supply special stainless, alloy, and carbon steels.

## Lab Construction Begins

Union Carbide Nuclear Co., a division of Union Carbide Corp., has awarded the general construction contract for its 85,000 sq ft nuclear and ore laboratories to Joseph L. Muscarelle Inc., Maywood, N. J.

Completion of the project, consisting of three buildings, is expected in mid-1959. The buildings will also be used by Union Carbide Ore Co. and Union Carbide Research Institute.

## Acquires Hydraulic Firm

L&L Mfg. Co. acquired Birmingham Hydraulic Products Co. and renamed it Birmingham Hydraulics Inc. The firm will continue to make hydraulic equipment but has a new home: 8088 E. Nine Mile Rd., Van Dyke, Mich.

## R&D Firm Expands

About 3000 sq ft will be added to the 7000 sq ft laboratory of Metal Research & Development Co., Scranton, Pa. A fabrication facility and a pilot plant utilizing metal powder rolling equipment will be installed in the addition, says Samuel Storchheim, president.

## Surface Systems Begins

C. O. Fiedler Inc. of Los Angeles has formed a new division, Surface Systems.

It will handle barrel finishing equipment, media, and compounds. Golden Latshaw, former president of Hydromatic Metal Finishing Corp., Cleveland, is sales and technical director of the new division, which maintains a testing laboratory for new media development and customer service.

## Subsidiary Is Renamed

Surveyor Service Co., Silver Spring, Md., a subsidiary of Crouse-Hinds Co. since 1956, has been renamed Crouse-Hinds Instrument Co. Inc.

President of the new company is Robert J. Sloan, also president of the parent firm, which makes mainly weather detecting and recording instruments. New products in the telemetering, supervisory control, and automation fields will be made,



cataloged, and sold through the Silver Spring facility.

## Mohawk Steel Growing

Mohawk Steel Co. Inc., Albany, N. Y., is spending \$650,000 on an expansion project at its Port of Albany location. Improvements include a 670-ft warehouse, two cranes, and a 1200-ft railway siding.

## New Name for Gage Div.

Bryant Gage & Spindle Div., Bryant Chucking Grinder Co., has been renamed Bryant Computer Products Div. It designs and produces magnetic storage devices for computers.

## Quest Foundry To Move

J. F. Quest Foundry Co., Minneapolis, will move into the Shakopee Foundry Co. plant in Shakopee, Minn., upon the sale of its present facility.

## Zagar Builds Addition

Zagar Inc. is erecting a 10,000 sq ft addition to its plant at 24000 Lakeland Blvd., Cleveland 23, Ohio. In the July 28 issue of STEEL, the firm was inadvertently referred to as Zurga Inc. (The announcement was made by Frank Zurga, vice president.) The expansion provides a 50 per cent increase in office area and allows a closer integration of sales and engineering departments. Zagar Inc. makes gang drilling and tapping machines, multiple-spindle gearless drill heads, broaching machines, collets, and collet fixtures.



## CONSOLIDATIONS

Underwood Corp., New York, acquired Canoga Corp., Van Nuys, Calif., producer of missile range instrumentation and advanced radar systems. Paul H. Ryckoff was named president of the Canoga Div.

Dudek & Bock Spring Mfg. Co. purchased Advance Spring Corp. and will operate it as a division. Headquarters of both firms are in Chicago.



## NEW PLANTS

Ceramic-Metal Assemblies Corp. is operating its new Latrobe, Pa., plant. The new company provides prototype and production quantities of ceramic-metal assemblies.

SPS Western, a division of Standard Pressed Steel Co., Jenkintown, Pa., is producing steel shop and office equipment and aircraft fasteners in its new \$5-million plant at Santa Ana, Calif.

Pendleton Tool Industries Inc., Los Angeles, acquired a plant in Ft. Smith, Ark., for the manufacture of tool boxes by its subsidiary, Duplex Mfg. Corp. New machinery and equipment are being installed.

American Can Co. has opened a 90,000 sq ft facility, adjoining its Los Angeles plant, to shear steel and tin plate coils into standard sheets. Capacity is 90,000 tons a year. The installation is the sixth opened by Canco in the last 18 months and is part of its \$31-million nationwide network of coil processing plants. Two others (in Hillside, N. J., and Houston) will be opened later this year.

Beryllium Corp. announces the opening of the nation's first integrated, privately owned beryllium fabrication plant at Hazleton, Pa., adjacent to its metal production plant. The only other complete beryllium fabrication plant was owned by the Atomic Energy Commission. Most of the new plant's output will go to the nuclear market, but experimental shapes for aircraft R&D will also be produced.

Esco Ltd., subsidiary of Electric Steel Foundry Co., Portland, Oreg., reports its new foundry in Port Coquitlam, B. C., is in full production. It will turn out 1/2 to 5000 lb alloy steel castings.

Highway Trailer Co., Edgerton, Wis., will lease a \$1.2-million factory to be built by the Greater Hazleton Community-Area New Development Organization Inc., Hazleton, Pa.

Smith Corona-Marchant Inc. will begin construction this fall on a 150,000 sq ft plant near Cortland,

N. Y. Elwyn C. Smith, president, says the plant will manufacture portable typewriter parts. Employment will be about 600.

International Tool Co., Dayton, Ohio, will build a 4200 sq ft plant in Hampton, S. C. It will be managed by Carl F. Kohl. Completion is scheduled for Oct. 1. Estimated cost: \$40,000.

Garratt Aircraft Ltd. is constructing a 20,000 sq ft plant at Toronto, Ont. The firm makes aircraft frame components.



## NEW OFFICES

Kaiser Steel Corp., Oakland, Calif., opened a district sales office in Houston. Robert E. Brown is in charge.



## NEW ADDRESSES

U. S. Steel Supply Div., U. S. Steel Corp., moved its Chicago warehouse operations to larger quarters at 13535 S. Torrence Ave. William J. Borwick is the district manager.

Meteor Mfg. Corp., formerly of Buffalo, has moved its factory and offices to larger facilities at Emporium, Pa.

Eagle-Picher Co.'s zinc metal sales department has been moved from Miami, Okla., to the company's general offices in the American Bldg., Cincinnati.

Pennsalt Chemicals Corp., Philadelphia, moved its Pittsburgh regional office for industrial chemicals to Natrona, Pa. John C. Hampson is regional manager in charge of sales activities for Pennsalt organic and inorganic chemicals. Sales, research, and development units of the Corrosion Engineering Products Dept. also were moved to Natrona.

Navan Products Inc., subsidiary of North American Aviation Inc., Santa Monica, Calif., is moving its general offices to 900 N. Sepulveda Blvd., Los Angeles 45, Calif.



# "We switched over to Columbia- within the first 22 weeks

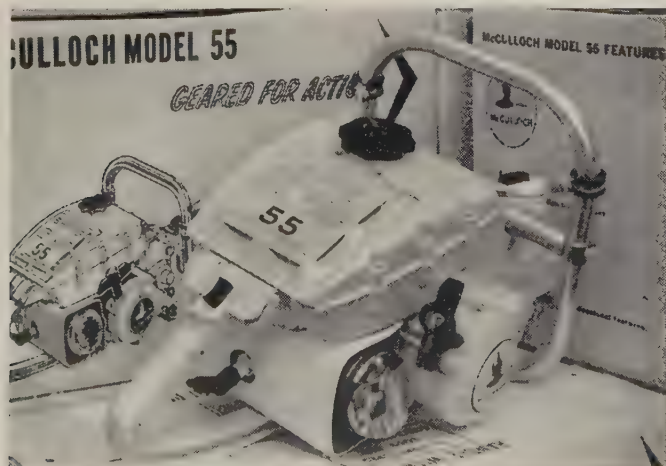
*says Mr. Bernard Rosebrough  
Plant Engineering Project Coordinator  
McCulloch Corporation  
Los Angeles 45, California*



**"We'd tried four other degreasing solvents,** so I have a real basis for comparison. For example, within 22 weeks after putting in Columbia-Southern Trichlorethylene, we'd cleaned out each of our six units just once. With all the other solvents used, our degreasers needed cleanout and fresh solvent every three weeks. We now make one changeover, instead of eight for the same period. Our net savings on man-hours for maintenance alone, without counting loss of production, added up to \$2,100.



**"Here's the plant,** at 6101 West Century Boulevard. We produce our own line of McCulloch Chain Saws, Scott-Atwater Outboard Motors, Superchargers for custom cars, and four-cylinder drone engines for military target ships.



**"This is the Model 55,** one of our most popular chain saws. We run magnesium, aluminum and steel parts through the degreasers in producing all of our saws and other products. That's one reason why we insist on high solvent uniformity and purity.



# Technical Outlook

**PULLING FOR WORK HORSES**—Clyde Williams, president of Clyde Williams & Co., Columbus, Ohio, predicts that the demand for some high temperature metals will double or triple in the next seven years. Delivering the Horace W. Gillett Lecture at the annual ASTM meeting in Boston he described cobalt, columbium, chromium, molybdenum, nickel, and tungsten as the work horses of the high temperature age.

**STRONGER NAILING**—Plywood sheathing in house construction can be fastened better with short, thick, threaded nails than with long wire nails, says Virginia Polytechnic Institute. In diaphragm sheathing construction, wire nails lose holding power and pop out, explains the institute. Threaded nails won't pop, transmit greater shear load, won't bend, and drive harder and faster.

**SOIL NET**—Wire poultry netting (40,000 lb of it) is keeping newly seeded hillsides around the Air Force Academy near Colorado Springs, Colo., from washing out. When the grass grows, the netting will be left in place to hold the soil against the damage of prolonged rains. The job will take over 2 million sq ft of netting.

**HOTTER FLAME**—Flame temperatures of 3450° F are produced by a high-velocity burner marketed by E. W. Bliss Co., Canton, Ohio. Burning either fuel oil or natural gas, the Bliss Radiant Burner produces a pulsating, luminous flame. Fuel savings are said to range from 12 to 30 per cent; flue gas is clean without soot or carbon monoxide.

**HOW RADIOACTIVITY SERVES**—Here are some of the ways you can benefit: 1. It traces minute quantities of undesirable elements in metal compositions. 2. It measures tiny amounts of additives. 3. It helps you develop products from materials available as low concentrates. 4. It aids the analysis of elements that are hard to find and detect. (You don't need to use complex laboratory techniques.) 5. It assists in deciding the feasibility

of recovering the valuable trace metals in ores, minerals, effluents, and other waste products.

**LIGHTER, BETTER INSULATION**—Johns-Manville researchers recently came up with a tough plastic-asbestos combination which contains a lot of tiny porous particles. It works for long periods at 1300° F and is 50 per cent more effective at 50,000 ft. Other specs: Tensile, 34,500 psi; weight, 106 lb per cubic foot; minimum thickness, 0.010 in. The firm looks for industrial as well as missile applications.

**ALUMINUM UPS PAYLOAD**—Weight savings gained with a new aluminum bottom dump trailer, built by Schetky Equipment Corp., Portland, Oreg., will permit carriers in that area to earn \$1.25 more a yard-hour. It's constructed of welded Kaiser alloy 5086 sheets and plates. A steel trailer of the same volume is 2000 lb or more heavier.

**SUGGESTS STAINLESS USES**—A major producer says stainless bars and wire can upgrade your profits three ways: 1. The metal increases beauty or improves resistance to corrosion, heat, stress, impact, or wear. 2. Stainless from stock may be cheaper than some special alloys for regular production items. (Some grades are made to boost machining speeds.) 3. "Made of stainless" can be a big selling point.

**INCO'S NEW NICKEL PROCESS**—Instead of a metal anode, the method reduces a nickel matte (an artificial sulfide) by direct electrolysis. It eliminates high temperature oxidation and reduction and increases the percentage of metal recovery. The company used to get 12 metals from the ore with the old process. The new one recovers two more: Large amounts of selenium and sulfur.

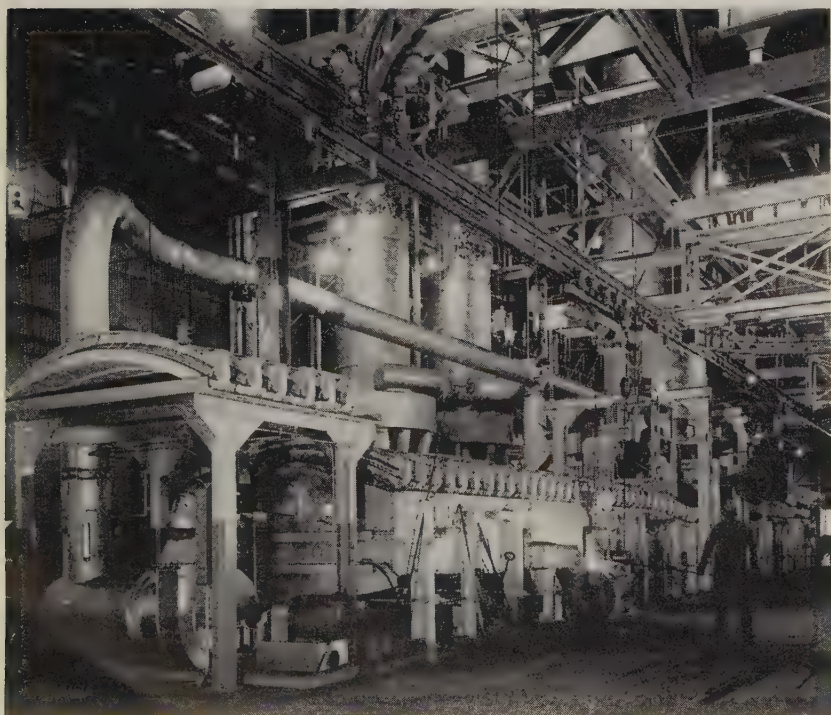
**PROPOSES TEST CHANGE**—Replacing the standard "V" with a cylindrical notch of 0.5-in. radius is a more effective way to measure toughness, says Crucible Steel Co. of America, Pittsburgh. Advantage: Greater spread of impact values without change of apparatus.



# Link-Belt's Foundry: Picture of Efficiency



Storage and charging yard at Link-Belt's new foundry is housed in a steel frame building. At one end is a concrete bin for coke; at the opposite end is a bin for scrap iron. In the center are coke and limestone hoppers



Duplex melting system includes two, 54-in. cupolas and two, 30-ton air furnaces. Metal enters furnace at 2700° F, is tapped into ladle at 2950° F

THE highly mechanized, malleable iron foundry at Link-Belt Co.'s Ewart Plant in Indianapolis is an example of what a foundry equipment specialist chooses when it builds its own facilities.

The foundry has five molding lines. They are equipped to handle molds for special jobs in limited quantity, small jobs semicontinuously, and production jobs continuously. Automatic shell molding machines

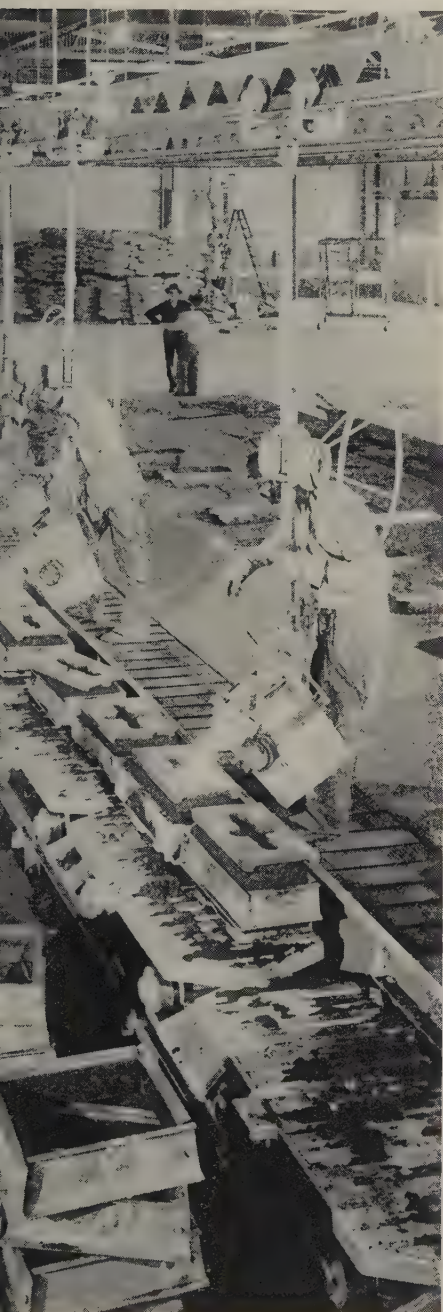


Three men pour molds on the move. They stand on a platform-type conveyor and pour molds on a conveyor whose travel and speed are the

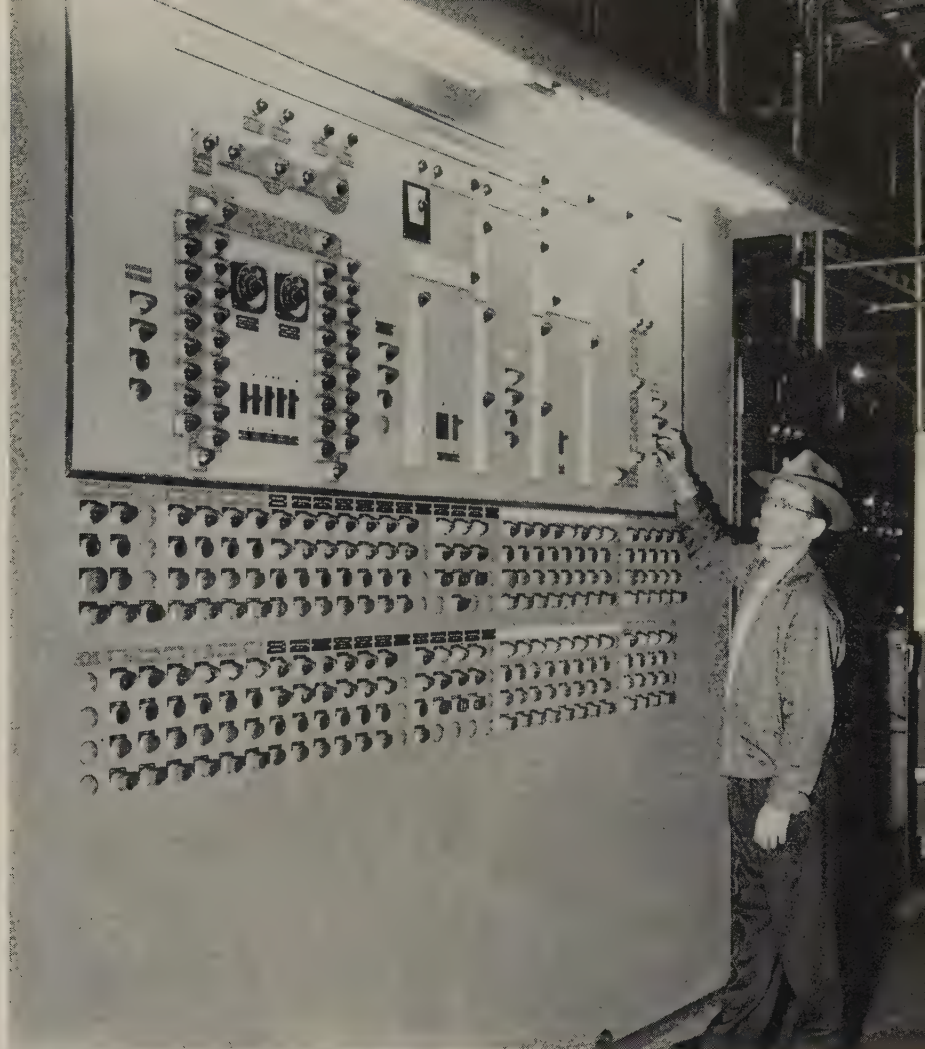


provide the speed for high production work. Flow of products, from raw materials to finished castings, is arranged in a straight line to assure maximum efficiency at each level of production.

Jobs scheduled include malleable and pearlitic detachable chain links, gears, sprockets, buckets, conveyor parts, and other castings needed for Link-Belt's handling and power transmission equipment.



same as the one they are standing on. A short section of exhaust tunnel beyond the pouring zone exhausts hot gases and fumes from the molds



One of two central panels controlling all phases of green sand molding from automatic preparation of sand to returning of sprue to yard area. The panel also controls the dust collection system, building heating, and ventilation

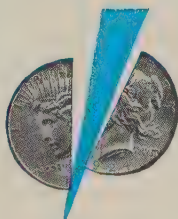


After pouring and cooling, molds and castings are discharged onto an oscillating conveyor running under the floor which in turn discharges to a vibrating shakeout screen that separates castings from sand. Certain types of castings are dumped onto the grating and separated from the sand at this point





## How We Beat the Cost Crisis



Direct labor savings will pay for this new machine in less than two years. It's a case where cost-conscious management boosted production efficiency. The article is one of the top entries in the Cost Crisis Awards Competition. Another will be published next week

# One Turret Punch Press Saves

CONTROL PANELS for electronic and magnetic systems were production headaches at the Control Div., Reliance Electric & Engineering Co., Cleveland. They, and similar operator's panels, had to be tailored for each order.

Here's the way Reliance production men had to make them:

First, different sized panels were sheared, notched, and formed, then laid away in inventory.

Second, when an order was received, a panel that most closely resembled the part was pulled from inventory.

Third, the stock panel was indicated for modification and drilled to final part layout.

**The Problem**—William J. Nemeth, methods engineer, lists these as the needed cost-trimming steps: 1. Eliminate inventory panels that didn't meet order requirements. 2.

Replace hand operations (layout and drilling) with more rapid machine operations. 3. Reduce the time taken in engineering and production departments to get manufacturing data for the shop.

Reliance engineers proposed a 40-ton, direct reading turret press made by Wiedemann Machine Co., Philadelphia.

**The Solution**—Now, panels are tailored to each order—there is no



# What It Saved:

- 57%** in direct labor on control panel production
- 78%** in direct labor on operator's panels
- 26%** in cost of parts previously purchased
- 84** hours per month of engineering time spent specifying and revising
- 23** hours a month in recording inventories and added rate setting

## \$2252.68 a Month

performing or panel inventory. Panel size and configuration are specified, and the information is put on a chart. The information (it's calculated on accounting machines) tells the operator the readings to set on the two graduated hand-wheels that control the press table.

After he has positioned the table, the operator indexes the turret to put the proper tool in position (also indicated on the chart) and fires

the punch. The variety of tools permits the press to pierce 0.093 to 3.0 in. holes in 1/4-in. plate, or to 6 in. holes in 1/8-in. sheets.

The only setup consists of mounting the tools called for in the punching chart. One panel that used to have a direct labor charge of \$18.74, now costs \$5.85.

**Gains**—The total investment for the press installation was \$47,320.49. An audit on the operation after the

### NEW METHOD

1. Shear.
2. Pierce all holes and notch.
3. Form.
4. Weld.
5. Paint with finish coats.
6. Forward panel to assembly.

### OLD METHOD

1. Shear
2. Lay out for corner notches and mounting holes.
3. Notch corners and pierce mounting holes.
4. Form.
5. Weld.
6. Paint with prime coat.
7. Place material in stock.

At this point the shop order was returned to material control to show that the part was in stock. When an order was received for a specific panel:

8. The panel was removed from stock.
9. Lay out for modification.
10. Drill or otherwise modify.
11. Deburr.
12. Paint with finish coats.
13. Forward panel to assembly.

machine was in full production showed that the equipment will be amortized in 1.8 years.

In addition, tabular drawings for stock panels (there used to be about 30) have been eliminated. Inventory of partially finished panels, and all associated records, are gone. So are the sometimes tedious book-keeping and manufacturing steps for panel modification.

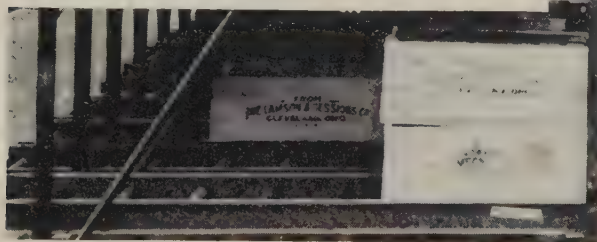
Where several identical panels are to be made, the punching charts can be re-used. Before, each panel had to be laid out individually. Additional capacity on the press let Reliance make some sheet metal parts that had been subcontracted.

Mr. Nemeth also says that the quality of the product is improved. Accuracy of the press gives better hole location, eliminating some knotty alignment problems. The blanked holes look better than their hand-finished predecessors.



# Six Ways To Save Handling

These racks with roller conveyors for shelves handle odd lots easily, cutting packing costs more than 50 per cent. Lamson & Sessions used to break open full cartons to fill such orders. The lift truck is battery powered. The operator controls the device from the platform

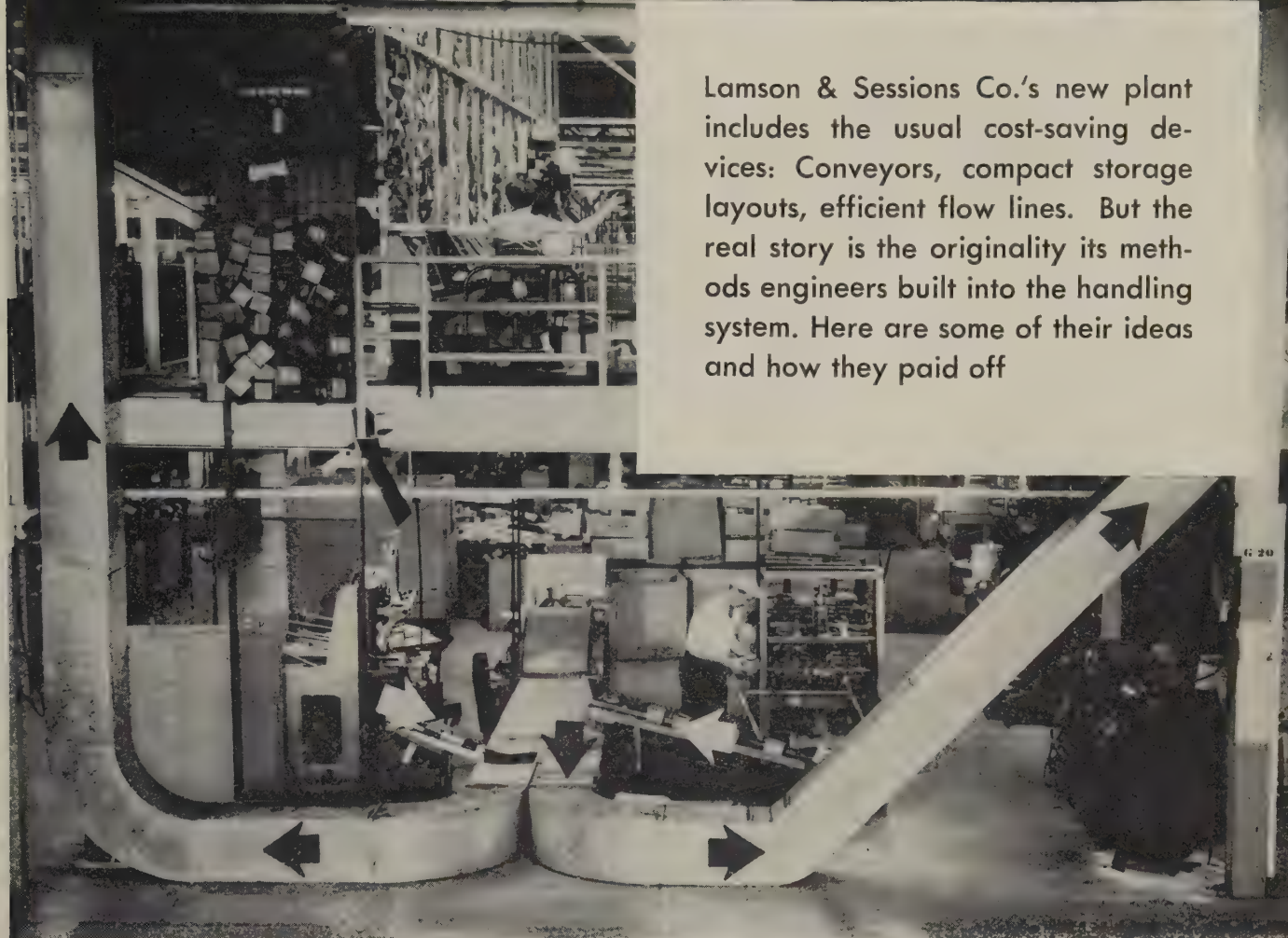


A metering device plus a horseshoe-shaped layout doubles this washer's capacity without an increase in the work force. Full bins start at the left and are upended at (1). Parts fall onto a variable speed conveyor belt which feeds the parts slowly and evenly to the hot alkaline wash. Upended bins are washed at the same time, emerging from a separate compartment at the far end. Conveyors take parts and bins to operator at scale. A revolving section of roller conveyor routes full bins to packing or heat treating



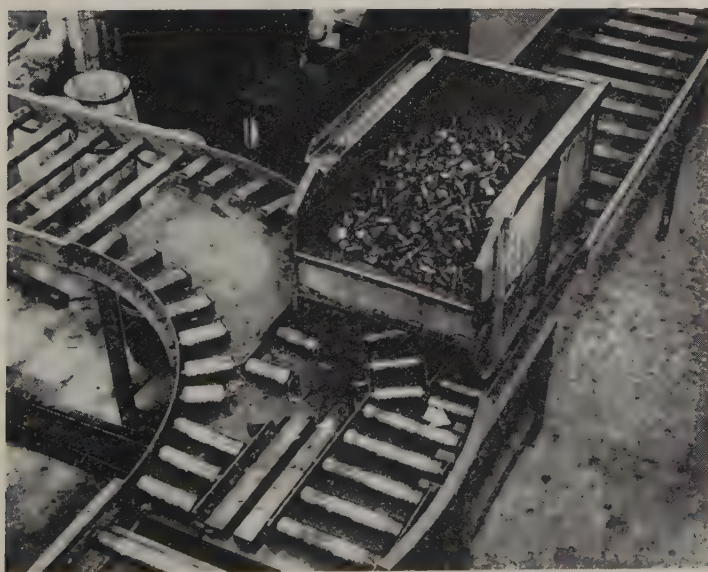


Lamson & Sessions Co.'s new plant includes the usual cost-saving devices: Conveyors, compact storage layouts, efficient flow lines. But the real story is the originality its methods engineers built into the handling system. Here are some of their ideas and how they paid off

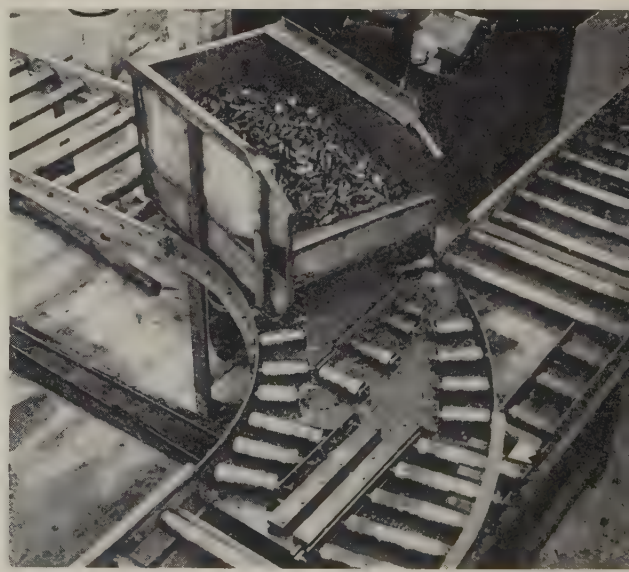


This two story, carton making setup cut handling labor 75 per cent, says H. G. Robinson, a Lamson & Sessions engineer, who designed the system to eliminate hand gluing and labeling. Boxes start in the assembling machines (ground floor) and drop from the conveyor into duct openings. Air at ordinary ventilating pressure carries boxes to the top of bins. (To sort them, each has a shutter operated

from ground level.) Girls operate printing presses which move from bin to bin on a track. Labels are printed directly on boxes. Each letter or character is held by a magnetized backing plate. Combinations are easily changed and a small type inventory is adequate for more than 8000 parts. (Construction note: Blower and ductwork were supplied by a local sheet metal contractor)



Conveyor switch designed by Lamson engineers works exceptionally well. It's part of a conveyor that does the work formerly done by three lift trucks. The outer rail (see arrows) moves while

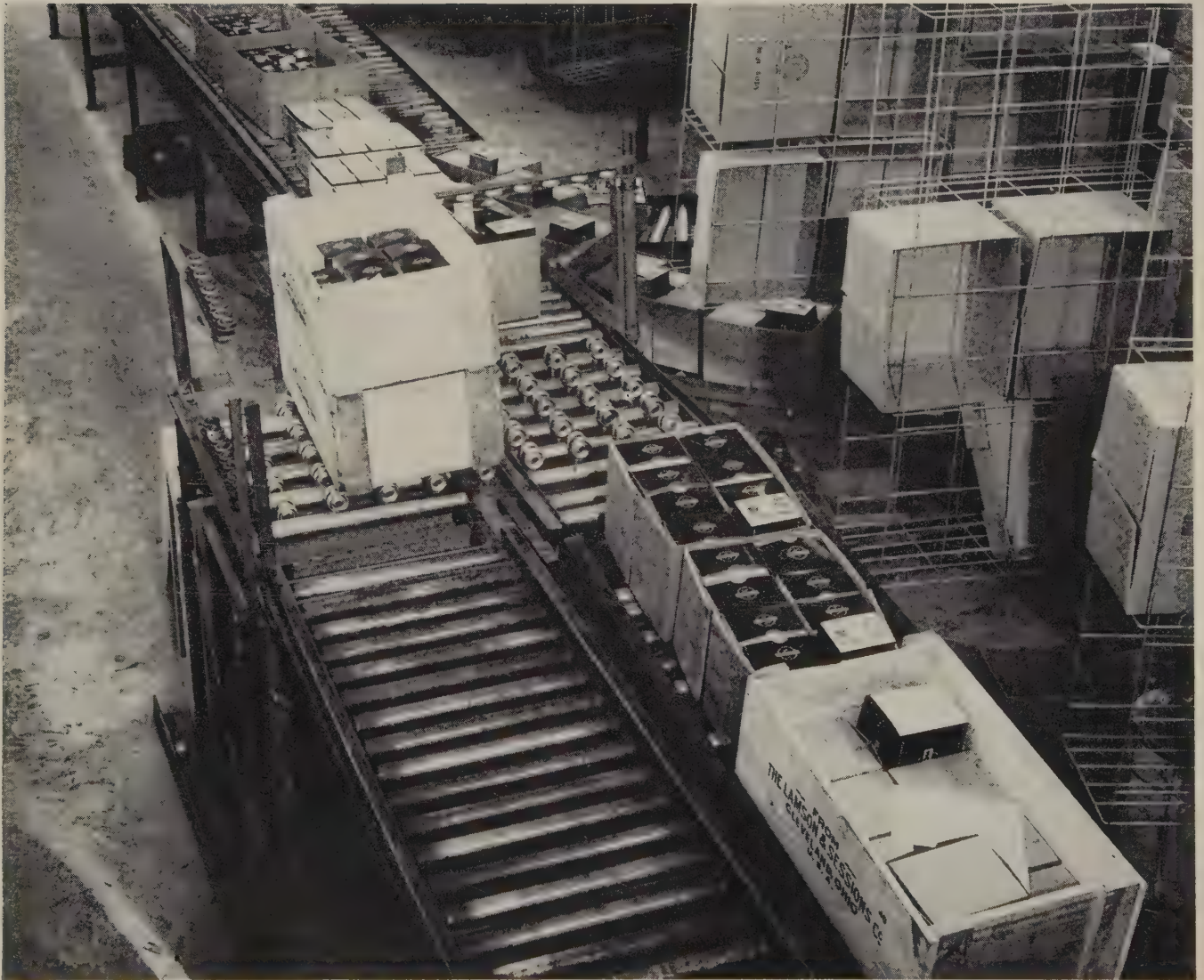


the inside bearings of the rollers shift to align them with bin direction. (Conveyor people at first told Mr. Robinson the design was too radical to be successful)  
(Please turn to Page 66)



# Handling

Excavator is used as unloader. Lamson used to unload coils of rods with a hoist on an A-frame. Another man had to assist the operator by manipulating the hook in tight corners. Average unloading time: 1½ hours. This Gradall fitted with a hook cut that to 30 minutes. It easily reaches into tight corners without assistance



Crossover switch saves double handling. This shunt is hydraulically powered, electrically controlled. Boxes headed for storage are piled two high. When they reach the first control bar, "roller skates" rise between the openings and

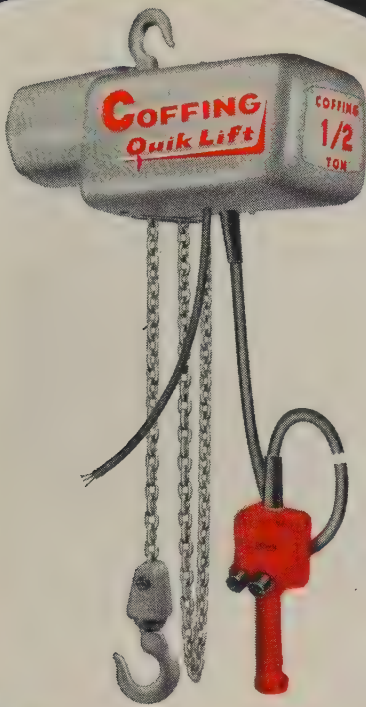
the boxes roll to the left. As soon as they clear the main line and push the second bar, the "roller skates" lower and the boxes continue toward the storage area. They are held in area shown on Page 64



The New

# COFFING *Quik Lift*

COIL CHAIN  
ELECTRIC HOIST



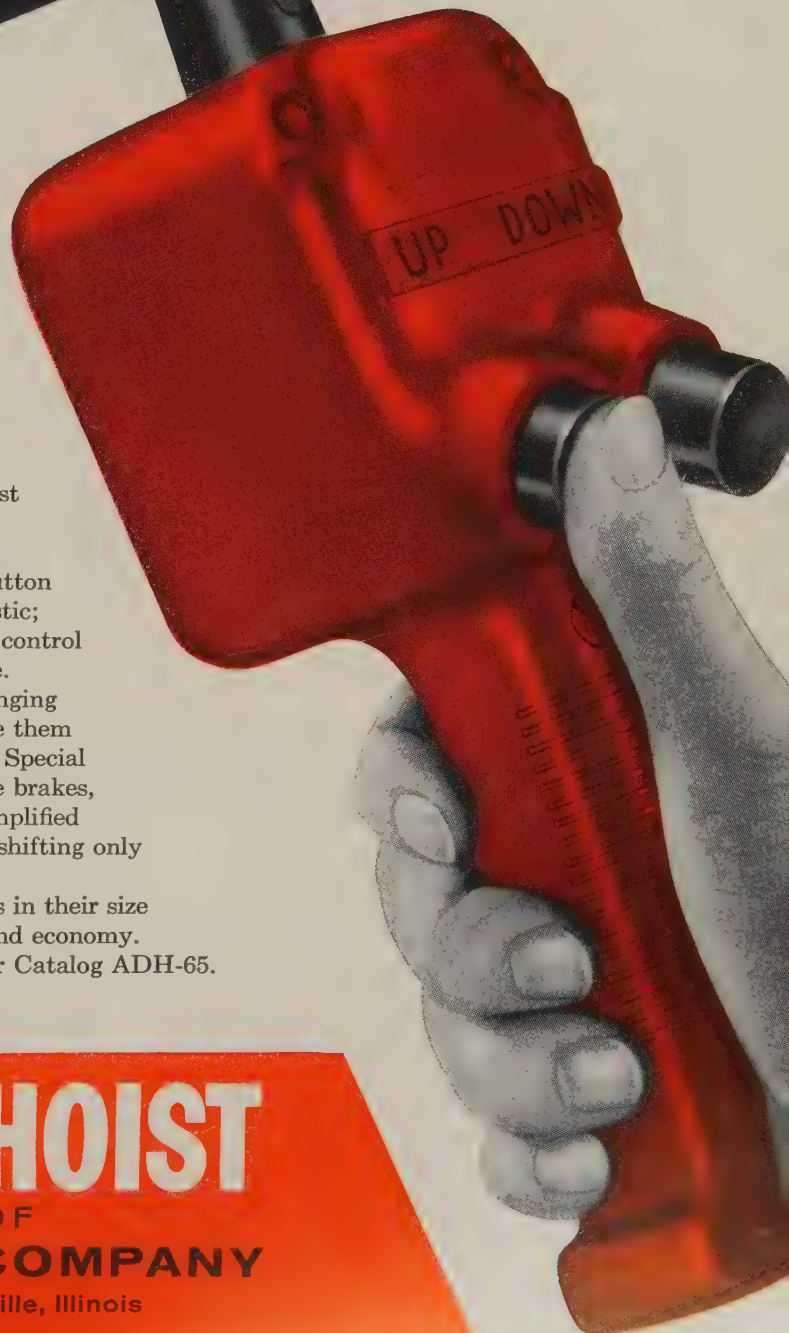
**"Pistol Grip"**  
push-button station  
permits easier handling of loads

Without shifting his grip, an operator can depress the up-down buttons of the "Pistol Grip" push-button station and at the same time pull a trolley mounted hoist along the beam to another position—a strain cable is incorporated in the control cord.

Convenience is coupled with safety, since the push-button station is made of non-conducting, impact resistant plastic; the push-buttons are mechanically interlocked; and the control circuit is limited to 115 volts, regardless of hoist voltage.

Coffing Quik-Lift hoists are available in 20 models ranging from  $\frac{1}{4}$  to 2 tons in capacity. Aluminum housings make them lightweight and easily portable, yet strong and durable. Special features include instantaneously releasing magnetic-type brakes, five-pocket load sheaves for reduced chain wear, and simplified wiring systems which permit motor voltage changes by shifting only seven quick connect terminals.

The new Coffing Quik-Lifts are the outstanding hoists in their size range from the standpoints of convenience, durability and economy. For details, consult your Coffing distributor, or write for Catalog ADH-65.



## COFFING HOIST

DIVISION OF

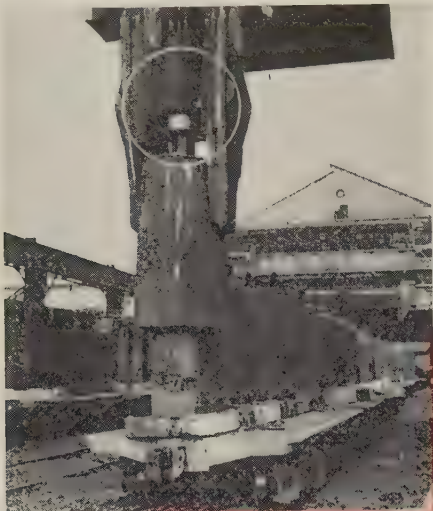
**DUFF-NORTON COMPANY**

813 Walter Street • Danville, Illinois





## PROGRESS IN STEELMAKING



Stripper screw



Crane turnaround gear

**At TCI, multipurpose grease helps  
keep these hot spots operating**

Soaking pit cover



Sintering pallet wheels



# Mill Saves with Multipurpose Grease

Tests at Tennessee Coal & Iron Div., U. S. Steel, plants show longer life and simplified lubrication for parts operated in high temperatures can be obtained with microgels

IN ANY STEEL MILL, high operating temperatures, dust, and water can attack bearing and gear lubricants to a point where they are no longer serviceable. Downtime increases; replacement of parts

becomes more frequent; and maintenance costs mount.

Steel companies have tried to guard against lubricant failure by using many types of oils and greases. Each is selected to satisfy a partic-

ular lubrication need. But such an approach means that large quantities of lubricants have to be stockpiled.

Engineers at the Tennessee Coal & Iron Div. of U. S. Steel Corp. have been investigating microgel type multipurpose greases as a solution to this stockpiling problem. These greases incorporate several desirable characteristics into a single



## MULTIPURPOSE GREASE . . .

lubricant. One such grease (Shell Oil Co.'s Darina 2) has been used to advantage for over six months at two facilities in Fairfield, Ala.

**What Are They?**—Multipurpose greases, such as Darina 2, are microgel (or inorganic nonsoap thickened) lubricants which are insensitive to high temperatures and have no dropping point.

Microgels are equal to lithium-base greases in low temperature characteristics, corrosion protection, and oxidation stability. They surpass them in high temperature mechanical stability, water resistance, and water absorption characteristics. A temperature of 450° F is considered a reasonable maximum limit for microgel type multipurpose greases.

Here are some of the places in which these lubricants are being tried at TC&I.

**Screw Vulnerable** — The 200-ton capacity stripper crane at the Fairfield Works has a ram powered by a 15-ft screw which works directly over the ingot. Both the screw and its nut are subjected to high heat.

Keeping the nut and screw well lubricated was difficult because the light, leaded gear oil would melt and drain out. Since there was no way to pump the oil back, the screw froze frequently.

**Grease Makes Seal** — The problem was overcome by packing the bottom of the ram housing with the multipurpose grease, then pouring in leaded gear oil. The high temperature grease acts as a seal and prevents the lighter oil from falling through the nut.

The method has resulted in lubricant savings of almost 30 gallons weekly for the stripper crane alone. Twice weekly, 1¼ gallons of the grease and the same amount of oil are added. Before, more than 5 gallons of the oil alone were required each day.

**Soaking Pits Critical**—Ingots are charged into 17 rows of soaking pits. Depending on the type of steel and the temperature of the ingots, it usually takes from 2 to 6 hours to bring them to rolling temperature.

The pit covers, which ride on rails mounted on the pit roof, are lubrication trouble points in this area. Each cover has two gear driven wheels and two idler wheels. The

wheels are constantly exposed to some soaking pit heat. (How much depends on how well the covers fit.) Many times a day they are exposed to the full heat as the covers are rolled back for checking temperatures, charging, and removing ingots.

**Grease Saves Wheels**—High pit heat caused bearing burnout and made it necessary to replace four or more cover wheels weekly. The conventional grease melted and ran out on the floor. After the multipurpose grease was substituted, wheel changes averaged about one every two months.

Wheels are greased daily, but the period will probably be extended by days, even to a week, as the safe life of the grease is determined. The lubricant is pumped with a handgun into the gear housing until the grease comes out around the axle. This lubricates the wheel bearings and bearings on the gear drive lineshaft.

The maintenance crew has already noticed a sharp reduction in the volume of grease needed for each charge: One or two strokes with the gun, vs. four formerly.

**Heat Dries Gear**—A soaking pit crane is equipped with a turnaround gear at the bottom of the tong housing. The gear permits the tong to revolve 360 degrees when it is lowered into the soaking pit.

At times, as when making the pit bottom, the end of the tong must reach to the bottom of the pit where the temperature is well over 2500° F. A high temperature grease is important in extending the service life of gears which can be lubricated only when they are changed.

Conventional greases usually burned out quickly. The dry gears could not tolerate the rapid forward and reverse motion of the crane controller, and stripped gear teeth made frequent replacement necessary.

**Gear Packing Holds**—The practice now at TC&I is to pack the gear cavity with the multipurpose grease and cover the mechanism with a steel plate.

One charge is considered enough to last until the gear has to be changed, which averages once a month because of normal wear. When changing gears, it is common to find the housing still well packed with grease.

**Stop Bearing Leakage**—The multipurpose grease has also proved effective in the sintering plant, primarily because its nonmelting characteristics eliminate bearing leakage at elevated temperatures.

At TC&I the three sintering machines are operated 20 turns a week, with one turn a week for maintenance. As the sinter burns, the pallets, wheels, and bearings are exposed to temperatures near 170° F.

The combination of high heat, abrasive dust, and water makes it difficult to keep the 648 wheels well lubricated.

**Cost Cut**—Seals sometimes burn out and wheels freeze. If the lack of lubrication is spotted in time, the pallet can be pulled off and the bearing replaced at a cost of \$5 each. But if a bearing freezes and a wreck occurs, it can ruin up to four pallets (replacement cost, \$500).

Maintenance costs on the sintering machines have been sharply reduced by using the multipurpose grease. It is resistant to high ambient temperatures and provides a grease seal around the hubs, keeping dust and dirt out of the anti-friction bearings.

Formerly, each wheel was lubricated at least twice a week. Now the lubricating cycle has been extended to once every three months.

The period has been established as the maximum lubrication interval, but the equipment is checked constantly to assure that no wheels run dry.

## Zirconium Rolled Ultrathin

American Silver Co., Flushing, N. Y., is rolling zirconium strip as thin as 0.0008 in. for use in new miniature photoflash bulbs. The small quantity of metal produces the same light output as larger bulbs because of the high burning efficiency of zirconium, although the miniatures are only one-quarter the size of conventional bulbs.

Extremely tight tolerances are necessary in production of the strip. Variations in thickness change the time interval from initial ignition to flash peak as well as over-all light output. The strip is rolled on precision mills with electronic gaging equipment.



# integrated CRUCIBLE steel service



SALES-SERVICE ENGINEER  
(TOOL STEEL SPECIALIST)

TRUCK DRIVER

WAREHOUSE MAN

INVENTORY  
SPECIALIST

SALES-SERVICE  
ENGINEER  
(ALLOY STEELS  
SPECIALIST)

METALLURGIST

WAREHOUSEMAN

ACCOMMODATION SERVICES

SALES-SERVICE  
ENGINEER  
(STAINLESS STEEL  
SPECIALIST)

SWITCHBOARD OPERATOR

SALES-SERVICE ENGINEER  
(ALL PRODUCTS)

TELETYPE OPERATOR

INSIDE ACCOUNT SALESMAN

Local Crucible personnel provide service in depth, ranging from quick reports on steels available to expert assistance with metal working problems.

Average warehouse staff is backed up by Crucible Metallurgists who, although located at mills, will travel.



# maintains broad range of local customer services

*- ranges from in-stock deliveries to metallurgical research*

ere's service in depth, made possible  
Crucible's integrated operation. It  
arts with in-stock deliveries of the  
eels you need and goes on to provide  
omplete technical assistance for engi-  
ners, production, toolroom and main-  
enance men. And the entire service is  
ailable from all of Crucible's 27  
warehouses —

) *Deliveries from local stocks* of  
0,000 specialty steel items, including  
grades, shapes and sizes.

) *Basic specialty steel data* — com-  
ete breakdowns on properties, char-  
acteristics, as well as machining and  
abrication details. (Warehouse  
count salesmen can frequently rec-  
ommend the best steel for the end use.)

) *Metalworking assistance* with un-  
ual machining and fabricating prob-  
lems — by trained, experienced sales-  
ervice engineers who specialize in tool  
eels, stainless, alloys.

) *Metallurgical research* — help in  
veloping steels for tomorrow's more  
acting applications from Crucible's  
etallurgists, who will come to your  
ant on call.

Here's what one purchasing agent  
cently had to say about this over-all  
ervice: "We need lots of help with new  
eels — ones we haven't used before.  
he reason we rely on Crucible ware-  
ouses is because their men know the  
swers — or can get them for us  
ickly."

Why not simplify your own specialty  
eel purchasing problems by taking  
vantage of this integrated service?  
rucible Steel Company of America,  
ept. PH15, The Oliver Building, Mel-  
n Square, Pittsburgh 22, Pa.



## MONTHLY STOCK LIST

Keep-up-to-date on the  
specialty steels availa-  
ble—when they're avail-  
able! Ask your local  
Crucible warehouse to  
send you its monthly  
stock list.



Crucible metallurgists will come to your plant, if necessary, to help engineers use new steels or metals like titanium.



Sales service engineers' experience with fabricating, machining problems can solve toolroom and production problems.



Truck drivers speed orders for over-night delivery to you—or earlier if your order is an "emergency."

**TOOL STEELS** — Water, oil, air hardening, shock resisting, hot work, plastic and die casting steels in all forms, including bars, sheets, plates, drill rod, hollows, forgings and flat ground stocks

**HIGH SPEED STEELS** — Crucible's famous "Rex"® steels: Rex Thrift Finish rounds, hot rolled and cold drawn flats and squares, drill rod, forgings, sheets, plates, and tool bits

**STAINLESS STEELS** — Bars, sheet, strip, wire, cold heading wire, metalizing wire, plates, angles

**FREE MACHINING STEELS** — Crucible Max-El® rounds, hexagons, plates and brake die steel

**ALLOY STEELS** — Bars, billets, strip and sheet

**COLD ROLLED CARBON SPRING STEELS**

**DRILL STEELS** — Wing or section twisted auger drill steels, hollow and solid drill steels

**ALUMINUM EXTRUSION DIE STEELS**

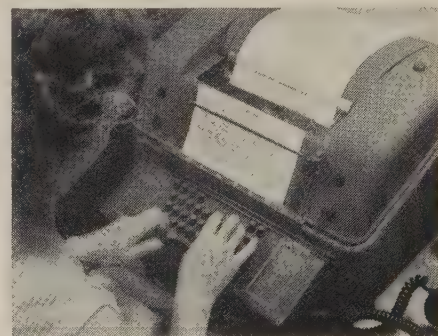
**HOLLOW TOOL STEEL**

**WELDING AND HARD FACING ROD**

**PLASTIC MOLD STEELS**

**PERMANENT MAGNETS**

— and many others

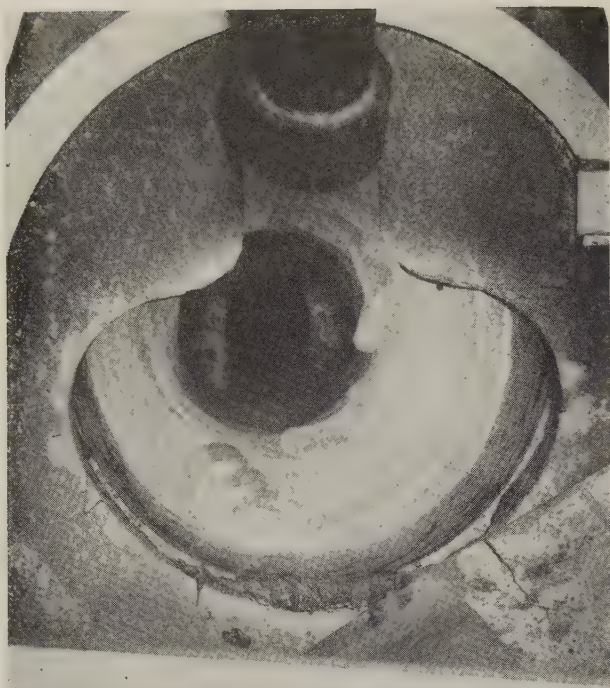


Teletype operators get direct reports on quantities available everywhere in the warehouse system — from Crucible's inventory-control computer room.

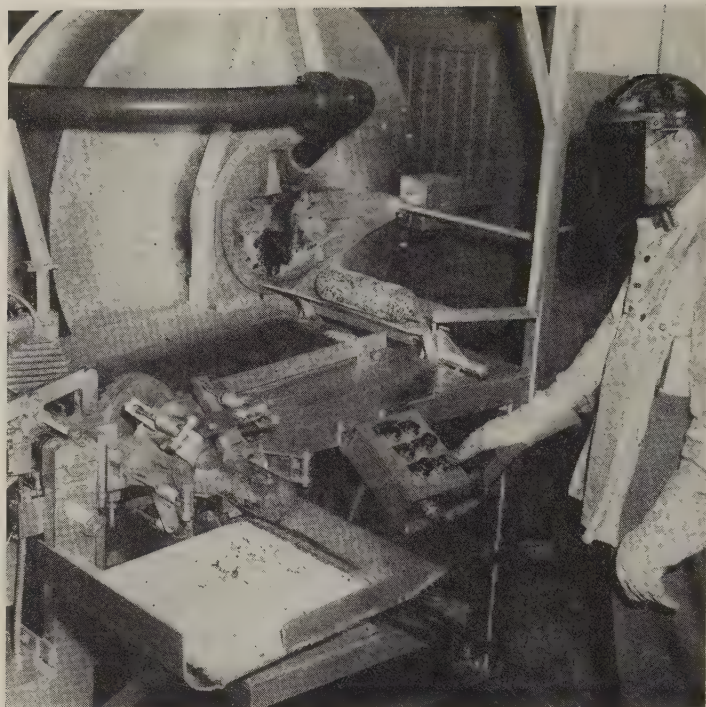
# CRUCIBLE STEEL COMPANY OF AMERICA

Branch Offices and Warehouses: Atlanta • Baltimore • Boston • Buffalo • Charlotte • Chicago • Cincinnati • Cleveland • Columbus • Dallas • Dayton • Denver • Detroit • Grand Rapids • Harrison • Houston • Indianapolis • Kansas City • Los Angeles • Milwaukee • New Haven • New York • Philadelphia • Pittsburgh • Portland, Ore. • Providence • Rockford • Salt Lake City • San Francisco • Seattle • Springfield, Mass. • St. Louis • St. Paul • Syracuse • Tampa • Toledo • Toronto, Ont.





Billets move through rotating furnace barrel. Molten glass is 4 in. deep. Cycle is 12 to 15 minutes



Removed from furnace, billets are pushed through a scraper which leaves a thin lubricating film of glass on them

# Glass Bath Heats Forging Billets

Operating cycles and control of workpiece temperatures are comparable to those of salt bath furnaces. The glass removes scale and prevents further oxidation

MOLTEN GLASS is used to heat extrusion and forging billets in a rotary, gas-fired furnace. The unit is being built by Bal-Tate Furnace Co., Royal Oak, Mich., under a license from Fiav Mazzacchera Co., Milan, Italy.

The furnace will handle billets (ranging from low carbon to stainless and tool grades) up to 10 in. in diameter. The operating cycle and control of billet temperatures are comparable to those of salt bath furnaces.

**Advantages of Unit**—The furnace can be heated to operating temperature in 2 to 3 hours, says Dr.

Armand di Giulio, Bal-Tate's president. That means it can be shut down overnight. "This makes for easier maintenance, and the glass bath does away with the need for expensive and hard to replace electrodes and water cooling," he explains.

"Because molten glass preferentially attacks iron oxides, it removes scale and rust from billets first but does not allow further oxidation under normal operating cycles," he adds.

The furnace is designed for two-man operation but can be made automatic. Lack of scale and uniform

heating permit efficient use of extrusion and forging pressures.

**How It Operates** — Billets first are fed into the recuperator (pre-heater) which uses waste heat from the furnace. They are heated for 30 to 45 minutes to about 1150° F, then charged into the rotary unit which turns at 1 to 2 rpm. Furnace temperatures are between 2100 and 2400° F.

About 150 lb of common scrap glass is used for most operations. It melts down into a bath 4 in. deep. At the end of 12 to 15 minutes at temperature, the billets are withdrawn from the furnace and pushed through a scraper to remove all but a thin film of the glass. They can go directly to the presses.

Dr. Di Giulio says the furnace will turn out 855 lb of billets an hour at 2250 to 2300° F.



## Oil Controls Heat

Precision grinding demands constant workpiece temperature. Here's how one firm does it

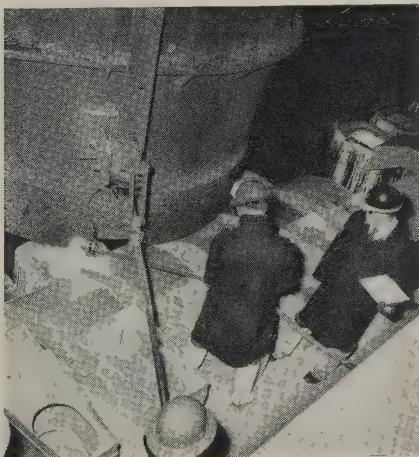
FLOODING the grinding contact point with oil solves the problem of controlling workpiece temperature for Moore Special Tool Co., Bridgeport, Conn. Tolerance requirements dictate such close control. The parts, which are cooled to the temperature of the oil, are used in instruments which measure to 1-millionth of an inch.

Warm oil from a filter and chilled oil from a heat exchanger are blended. The blending valve is connected to a recording chart that tells the operator the coolant and lubricant temperatures.

He can control the oil temperature to suit the grinding requirements. Temperature is constant to within 0.25° F.

**Filtering the Oil**—Sump pumps, manufactured by Deming Co., Salem, Ohio, take the used oil from the grinders. They pump it through a primary, double bank filter (10 micron, 27 element). The filtered oil goes to a 750-gallon chamber for aeration and settling.

After the second stage, the oil passes through a heat exchanger where it is cooled by water. The temperature is governed by a 5-ton refrigeration unit. After cooling, the oil passes to the blending valve.



**INGOTS BEING POURED** at Bethlehem Steel Co.'s Lackawanna, N. Y., plant are leaded steel. They will be rolled into free-machining bars and billets. The leaded carbon screw stock is being marketed under the tradename, Beth-Led

## MACHINE TOPICS

# Tool Business Still Slow

Despite some published opinions of an upturn, most builders see a fourth quarter with little change, perhaps only a slight edge upward. Here are the reasons

FOURTH quarter machine tool business is going to look a lot like the other three quarters this year.

That's the way most machine tool builders are betting. Reason: There's no known program or group of programs in the works that could give the industry a much needed lift.

**Markets**—The industry's biggest customer group, automotive, is going slowly on programs that would take new capital equipment. What tooling is required for new projects is being filled largely from the automakers' own long list of "surplus" equipment (STEEL, Aug. 4, p. 50).

The other big customer industries, such as aircraft, farm equipment, and road machinery, are adequately tooled to meet today's requirements. Although some machines are being sold to missile contractors, one builder says, "Too much of the missile money is going into research, development, testing, and instrumentation to benefit us greatly."

**Result**—Most builders are picking up enough scattered orders to keep them going. Part of this is made possible by their reductions in plant personnel and working hours that result in lower break-even points (STEEL, Feb. 3, p. 66). One Detroit builder tells STEEL that his business amounts to a "low budget prosperity" and that it will continue well into if not through 1959.

**Realism**—These reports come in despite optimistic claims by some professional observers that machine tool business is picking up. The rise in new orders from \$21.9 million in May to \$23.5 million in June was welcome, but considered only a trifle when spread across the whole industry. The June figure is only \$200,000 above the monthly average for the first half. A bright spot: Most builders continue to report a brisk pace in quotations.

Somewhat surprising to some ex-

perts, the fourth quarter prospects for special machines is about like that for the standards. A report in next week's STEEL will analyze trends and markets for the builders of specials, who feel their next boom is at least a year away.

## Eggs and Obsolescence

Like many other capital equipment builders, Jones & Lamson Machine Co., Springfield, Vt., is concerned with the number of obsolete machines that are turning out relatively "high cost" parts in industry. In a crusade to explain the importance of efficient production, the company has produced a 20-minute color film, "The Price of Eggs."

The message: An executive thinks a farmer who tells him he can take his pick of three boxes of eggs, equal in size and freshness, but priced respectively at 75 cents, 90 cents, and \$1 a dozen, must be mentally ill. But the same executive, in his own office, is unconcerned when confronted with the fact that it costs only 93 cents to make a part on a new machine, but \$1.02 on an older machine, and \$1.32 on a still older piece of equipment.

Real figures obtained by processing a specific part were used in the script. Simple arithmetic and logic are employed to spell out the expense of operating with less than optimum efficiency.

Jones & Lamson hopes the film can be shown not only to machine tool users (potential buyers), but to congressmen and others who have influence over such obsolescence factors as dollars and tax policy. They'll lend the film for private or public showings. They'll even furnish the film and printing plates for an accompanying booklet to competitive machine tool companies (the film and booklet are noncommercial).



# NOW... from MUELLER cold·prest<sup>®</sup> IMPACT

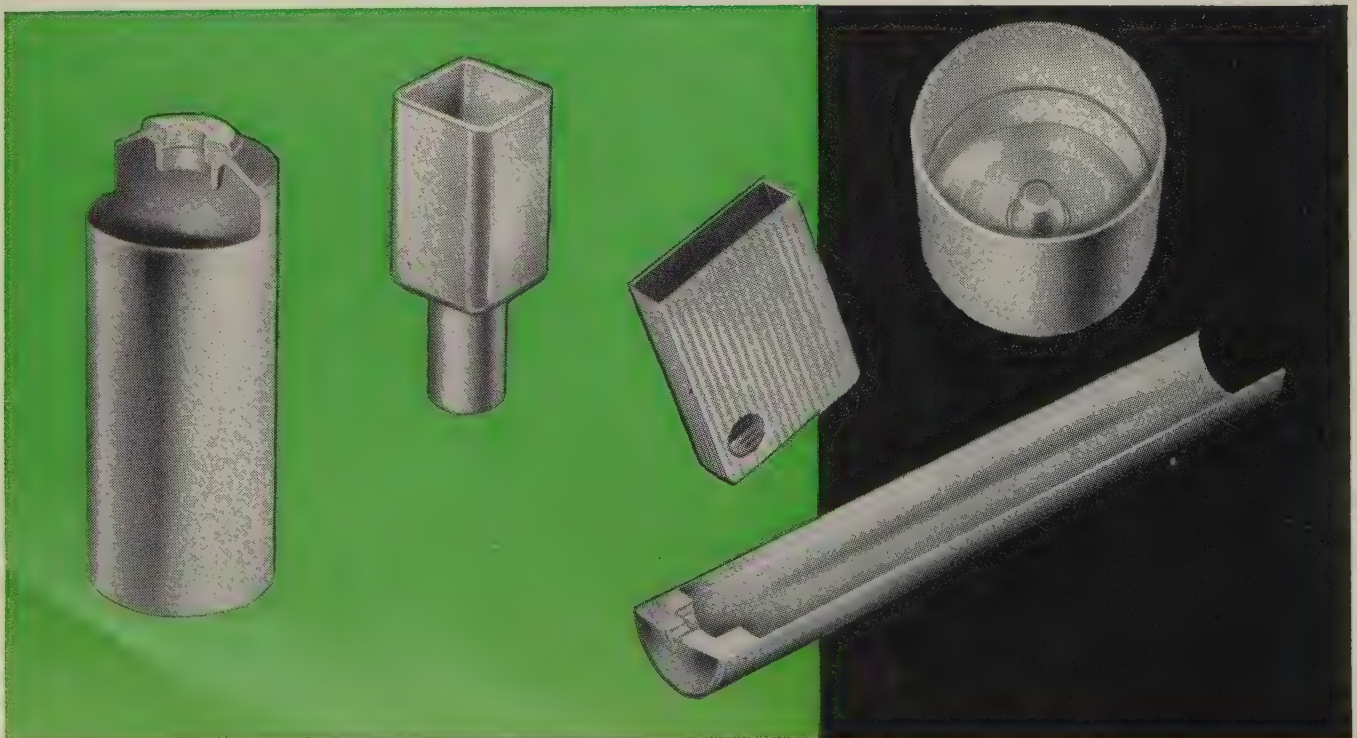
*the amazing, new, chipless metalworking  
method that cuts production costs...  
....improves part quality*

Cold-Prest Impact Extrusions are here. This amazing new method of producing parts to closer tolerances . . . with better physical characteristics, and with absolutely no waste and at extremely high speed is the greatest development in metalworking in the last 20 years. And it's proving to be the most practical method of manufacturing a staggering number of designs that combine cold forged bases with shells shaped as rounds, ovals or rectangles.

Here are some of the reasons why your company can save money and improve product quality . . . by specifying Mueller Brass Co. Cold-Prest Impact Extrusions. Parts are formed with *no chip loss*; you pay only for the metal that goes into the part. Because of the dimensional accuracy of Cold-Prest extrusions, parts can be held to closer tolerances and many costly secondary machining operations are eliminated. They have better physical properties with actually less metal needed to achieve greater strength.

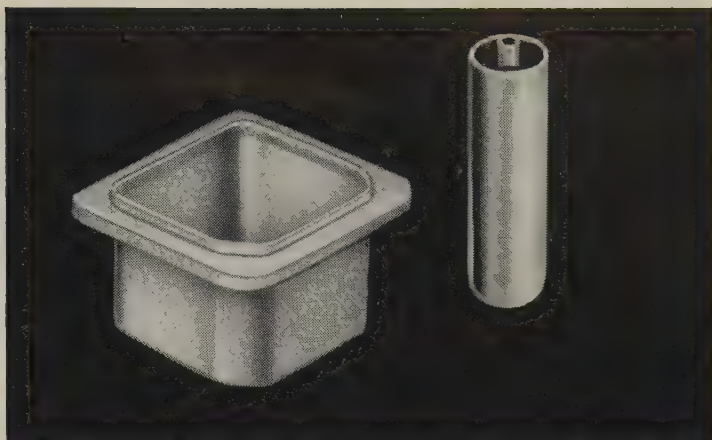
Cold-Prest Impact extruded parts often *reduce or eliminate assembly operations* because products employing several parts can often be made as a single extrusion. Also, complex parts produced by conventional methods requiring costly machining to close tolerances can be made in **A SINGLE OPERATION** as a Cold-Prest extrusion, saving raw material, costs of time, tools and labor . . . as well as assuring a positive leak-proof part.

These are the outstanding reasons why you should consider Cold-Prest Extrusions when you are specifying and purchasing fabricated metal parts. Call a Sales Engineer from the Mueller Brass Co. . . . he will be glad to discuss your problems and answer your questions. Write today for our new 16 page engineering manual on "Cold-Prest Impact Extrusions".





# BRASS CO. EXTRUSIONS



**MUELLER BRASS CO. SERVICES**  
mean better designed, better  
engineered, lower cost cold-  
prest extruded parts



To produce precision, high quality impact extrusions, Mueller Brass Co. combines all the important factors of design, engineering and production in its Cold-Prest extrusion process. Trained engineers take into consideration such elements as functional strength, finished appearance and proper control of metal flow. Mueller Brass Co. offers this design engineering service to its customers, and engineers are always available for consultation.



Here a die and punch assembly, made to exacting tolerances and with a mirror-like finish, receives a final inspection in the tool and die shop before being sent to the production department. Skilled craftsmen work with the best equipment available to produce these precision tools and dies. Technical skill, modern equipment and complete engineering services are available at no extra cost to you.

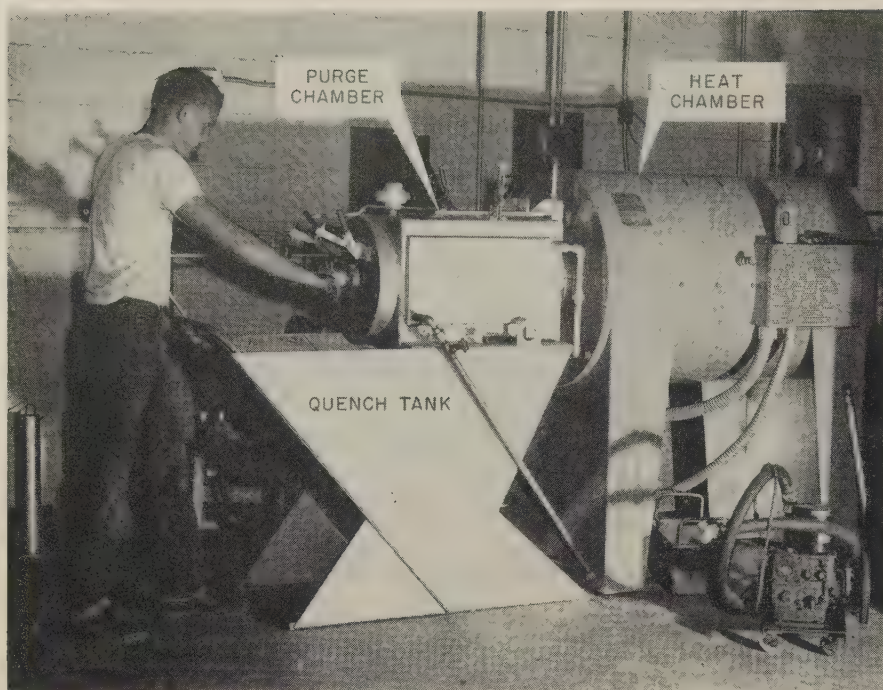
# MUELLER BRASS CO.

P O R T H U R O N 2 6 , M I C H I G A N



259





*Hot parts are pulled to purge chamber and quenched as . . .*

## Atmosphere Protects Finish

This heat treating unit protects parts against oxidation throughout cycle. It's used for small forgings, castings, and machined items of titanium, stainless, other metals

PARTS are protected against oxidation during heating, purging, and quenching in a furnace used at Metallurgical Consultants Inc., Maywood, Calif. Conventionally, the parts are exposed to air before quenching.

The work includes small forgings, castings, and machined items such as fasteners and fittings. Titanium, stainless steels, and other metals that require complete atmospheric protection are treated.

**Basket Holds Parts**—A container for the work is on a shaft that extends through the purge chamber into the heating section.

The operator simply withdraws the heated parts from the furnace into the purge chamber. He rotates the basket, and the parts drop to the quench bath. They fall into

another basket and are removed from the quench tank with a clean and polished surface.

**Equipment Design**—The furnace, made by Pacific Scientific Co., Bell Gardens, Calif., has a cylindrical heating chamber with Nichrome electrical elements around an Inconel retort. Radiation shields on the basket concentrate the heat so that temperatures within the purge chamber and the quench tank remain relatively low. Retort temperatures may be as high as 2000° F.

Air is evacuated from the retort and purge chamber. A back purge of inert gas protects parts as they are heated. Location of the gas inlet is such that argon or helium pass through the workload, enter the purge chamber, and exhaust through the quench tank.

## Fluid Pays for Itself

Synthetic hydraulic fluid does not require frequent replacement. It is fireproof

LONG RUN service and fewer maintenance manhours are said to be the benefits of a synthetic hydraulic fluid (Houghto-Safe No. 620) that is fireproof. It has been in service for 40 months in a die-casting machine at Electric Storage Battery Co., Philadelphia.

The machine was shut down recently, and the water glycol fluid was drained. Maintenance people claim that there was no oxidation, and fluid was in its original condition. Dust picked up in service floated on top of the liquid. Rings and vanes did not show any signs of corrosion or excessive wear.

**High Cost Pays Off**—The lubricant's cost is four times that of oil. It pays for itself by eliminating half a day a year of downtime (time needed to change regular oil).

Normally, oil oxidizes during use, forming sludge which settles to the bottom of the reservoir. A small amount works its way through the screens and into the rest of the hydraulic system, necessitating regular changes to fresh oil.

The 250-ton diecasting machine is basic to the plant's production of lead alloy grids for storage batteries. Hydraulic pressure clamps the dies for the shot and injects the molten metal.

**Water Is Added** — The water glycol is compatible with regular seals. It requires about 1 quart of water makeup per month. This maintains the viscosity recommended by the manufacturer, E. F. Houghton & Co., Philadelphia.

The product eliminates the hazard of a fluid line rupture near the open flame or the pot of molten metal (800° F).

## Vinyl Powders Offered

You can now get vinyl in powder form to coat metals. It's available from National Polymer Products Inc., Reading, Pa. Metal parts are heated to a temperature above the flow point of the resin and dipped into the powder. You can get thickness of 10 to 50 mils in one dip.





**Stainless Steel  
welding information:**

## \*Keep it clean

**You get strong, tight joints** when you weld Stainless Steel, but you have to make sure the surfaces have been thoroughly cleaned. Any grease, oil or dirt on the welded surface might affect the corrosion resistance of Stainless.

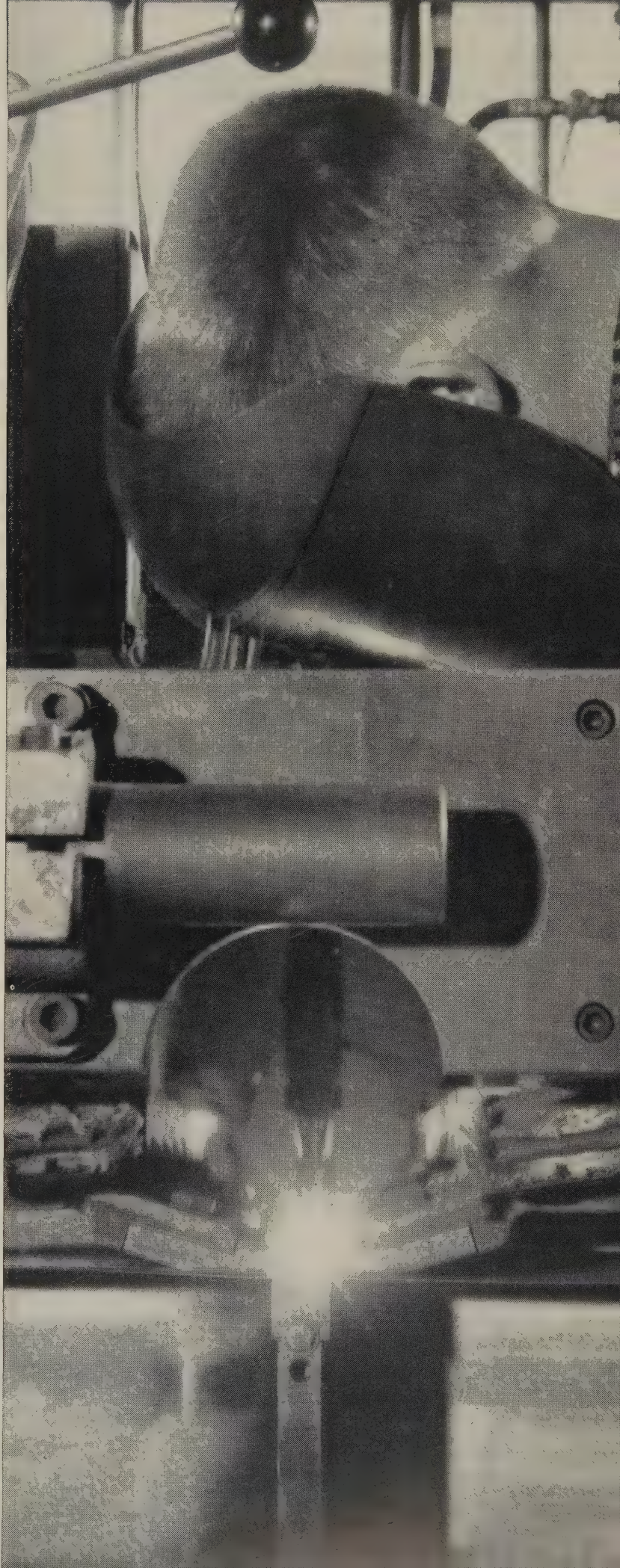
When you want to repair a crack, it's a good idea to chip out the cracked area completely so you're sure that only clean, solid metal is exposed. And remember, there are a lot of different kinds of Stainless Steel and they don't all react the same way. Be sure you handle each job right—check the "Stainless Steel Fabrication Book" before you start. If you don't have a copy of this 130-page guide, write on your company letterhead to United States Steel, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

**Remember:** Stainless Steel isn't difficult to fabricate; it's just different.

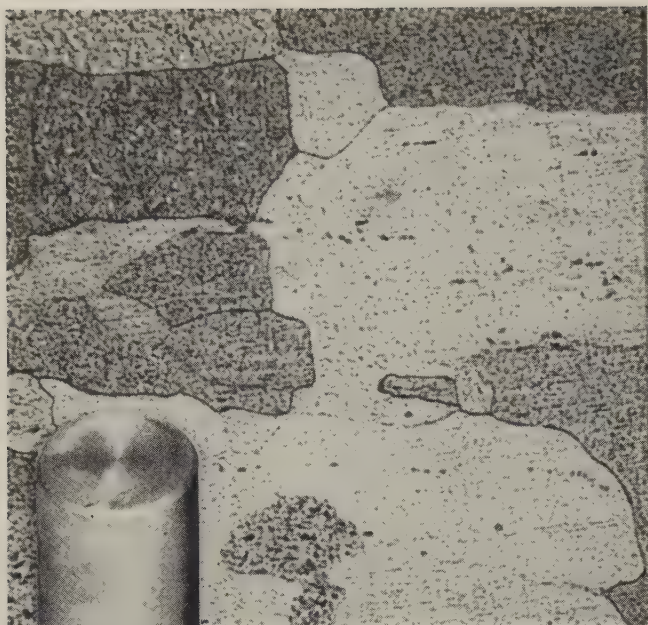
*USS is a registered trademark*

United States Steel Corporation—Pittsburgh  
American Steel & Wire—Cleveland  
National Tube—Pittsburgh  
Columbia-Geneva Steel—San Francisco  
Tennessee Coal & Iron—Fairfield, Alabama  
United States Steel Supply—Warehouse Distributors  
United States Steel Export Company

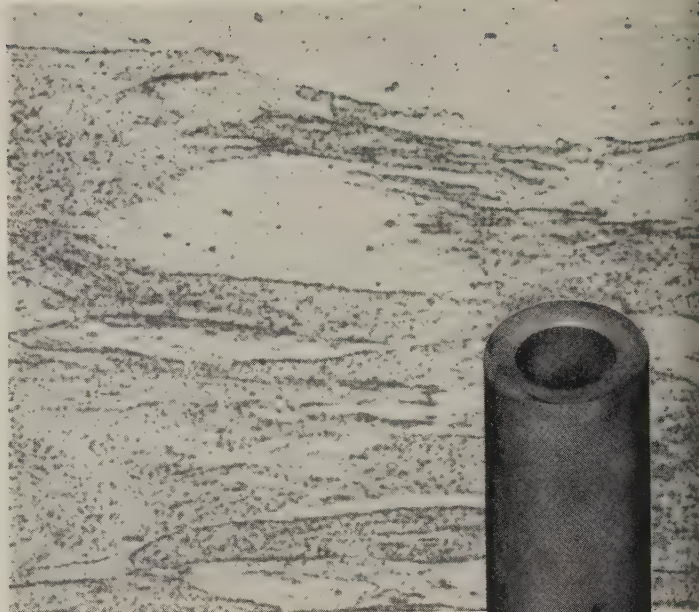
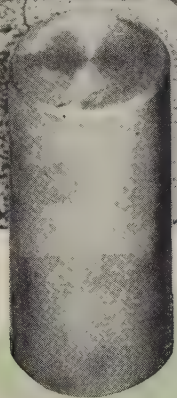
## United States Steel







Starting slug (machined from bar stock) has coarse grains . . .



Grains are distorted when the cup is formed by back extrusion . . .



## Forming Molybdenum Tubing:

Cast molybdenum is hot worked into small billets which are extruded in two steps to form tubing. Yield is only 60 per cent, but the prospects for improvement are bright

ARC CAST MOLYBDENUM (long classified as virtually unworkable by conventional methods) can be handled with less difficulty if its grain structure is refined. So reports Hunter Douglas Aluminum Div., Bridgeport Brass Co., Riverside, Calif., which has developed a cold extrusion method for making tubing.

Tubing it produces ranges from 1 to 6 in. in diameter. Seamless tubes 12 in. in diameter and several feet long may be developed with special techniques, says R. A. Quandt, vice president of research and development.

Lengths over 5 ft are feasible, depending on the combination of dimensions (outside diameter and wall thickness). Only unalloyed molybdenum has been successfully cold extruded because harder alloys (such as 0.5 per cent titanium) cause excessive tool loads.

Other shapes can be made if they are hollow, with one end closed, or where relatively heavy outside or inside diameter ribs are specified.

**Hot Breakdown**—A solid round billet for cold extrusion is made from the original casting by hot extrusion and hot rolling. Cast bil-

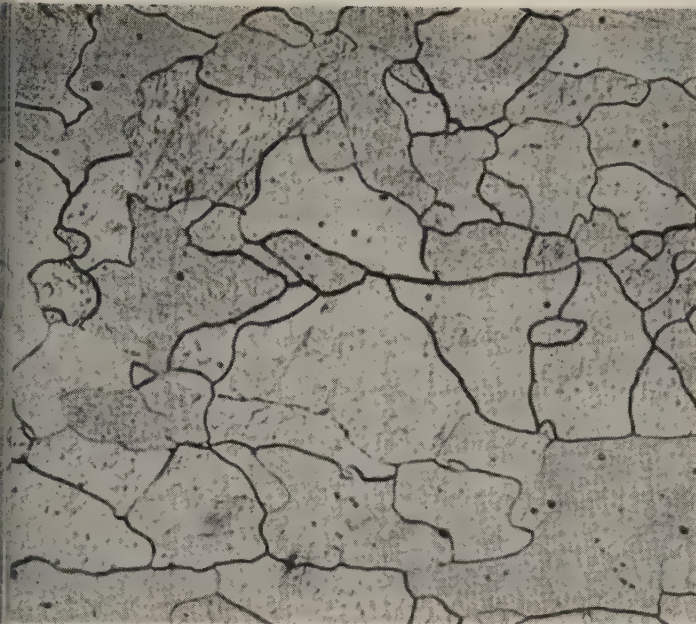
lets are first surface conditioned by machining and heating in a salt bath (2200 to 2400° F). The bath prevents both the fuming oxide and the formation of the slippery oxide surface that are characteristic of molybdenum. Salt adheres to the surface and protects it while lubricants are applied.

Extrusion ratios are about 3 to 1. The parts are stress relieved by annealing. Typical recovery is only 75 per cent since internal cracks are numerous and large cropping losses result from front end burst.

Cold work on the hot formed product must be done above the brittle transition temperature (above 150 to 200° F). Finishing operations often require intermediate anneals.

**Making Tubes**—The slug made

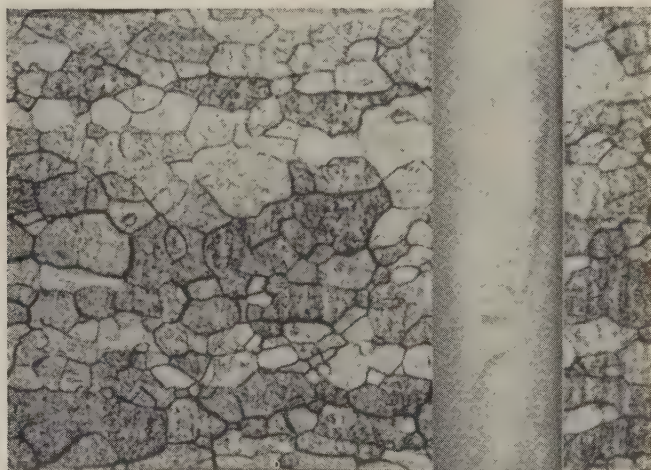




Annealing reduces the grain size before tube is formed by 74.6 per cent reduction . . .



Forward extrusion destroys boundaries (above). Annealing at 2200° F makes fine grains (below)



# Grain Size Is Key

by breakdown is heated to 600-800° F and cupped by backward extrusion. Tools are preheated to 500° F. The bottom of the cup must be trepanned or bored out before forward extrusion.

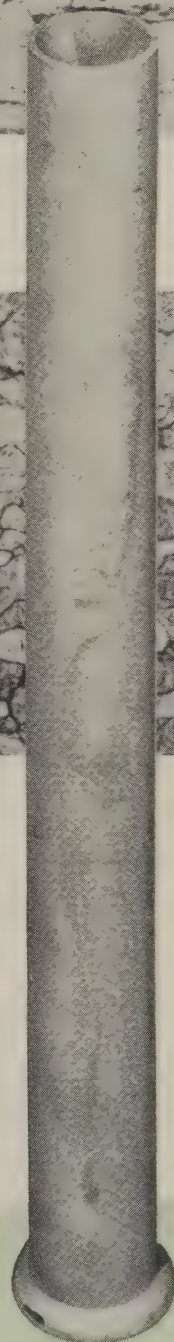
Section area is reduced about 75 per cent. With a starting slug 2 $\frac{3}{8}$  in. in diameter, the finished tube has an inside diameter of 1 $\frac{1}{2}$  in., a length of 16 in., and a wall thickness of 0.125 in. Yield from starting slug to finish is 82 per cent.

**Tube Properties**—The process is a step forward in the fabrication of molybdenum but the low total yield (60 per cent) and occasional surface deterioration caused by galling show there is room for improvement (surface finishes vary from 100 to 350 microinches rms).

Several results are encouraging: Maximum wall variation is 0.002 in. Tensile strength after 80 per cent reduction is 160,000 psi. Rockwell A hardness for as-extruded tubes is 63. After annealing at 2200° F in a hydrogen atmosphere, it is 53. Hardness of the original slug is 51.

**Outlook** — Hunter Douglas is working to improve the process. It is attempting to make tubing with less than 0.125 in. wall thickness. Tooling failures and breakage are problems, but tubes with 0.018 to 0.030 in. walls have been formed.

The company hopes to increase the extrusion ratio of the breakdown step, increase the ram speed, and utilize a 3200° F working temperature with an argon atmosphere induction heater.





## TURCO Gets a Better, More Uniform Finish

## And Cuts Paint Cost 35% with—

**RANSBURG**

### NO. 2 PROCESS

Frequent color changes are simplified now in the painting of playground equipment with Ransburg Electro-Spray in this St. Louis plant. Long, tubular parts, as well as these smaller pieces, are uniformly coated with the Ransburg reciprocating disk.



**QUALITY IMPROVEMENT!** That was Turco Manufacturing's chief reason for changing from flo-coat to electrostatic spray painting of their quality line of playground equipment.

Not only is Ransburg No. 2 Process providing a higher quality, uniform coating on all parts, but Turco is saving 35% in paint cost!

Simplicity in color change with Electro-Spray is another important advantage here. With Turco's production methods, colors are changed 15 times in an 8-hour shift. Now, changes are made on the fly with no down-time. By contrast, the former "stop and go" method would mean over an hour's lost time in a day's operation.

### NO REASON WHY YOU CAN'T DO IT TOO!

Whatever your product, if it's painted, we'd like to tell you more about the worthwhile savings and benefits which can be yours with RANSBURG ELECTROSTATIC PAINTING PROCESSES. Write for our No. 2 Process brochure which cites many examples of electrostatic spray painting on a wide variety of products.

Call or write

**RANSBURG**

**Electro-Coating Corp.**

3939 West 56th St., Indianapolis 23, Ind.

## Mill Goes to School

Syracuse University gets old Weirton cold mill for research on rolls and rolling

THE No. 12 cold mill from the 10 in.-16 in. Strip Steel Dept. at Weirton Steel Co. Div. of National Steel Corp. has gone away to college.

After a 40-year career in steel-making, the old hand mill has been donated to Syracuse University, Syracuse, N. Y., for experimental use.

**Postwar Casualty** — Two-high mills of the No. 12 type were used throughout the steel industry before World War II. Heavy demand for steel and lack of new equipment brought them back into full service in wartime. During World War II, the mill rolled clip stock for ammunition, and brass, copper, aluminum, magnesium, and silver chloride.

The job titles of the crewmen who operated the mills—feeder, roller, catcher and piler—have become classic in the industry. The old United mill was replaced by faster and more efficient equipment in March, 1956.

**For Research**—The mill was dismantled, and shipped to Syracuse on June 25, complete with drives, reels, motors, and controls. Also included was a 100-kw motor-generator set.

Syracuse University will use the mill in its efforts to improve the quality of steel mill rolls. The university will investigate not only the rolling processes but also how materials react under different rolling conditions. Included will be uranium, titanium, and super-high-strength steels.

## Loads Turned Mechanically

Greater safety, faster movement, better control, and lower operating costs: Those are the benefits Timken Roller Bearing Co. is realizing from a mechanical magnet turner. It's installed on an overhead crane used to handle billets and bars in the conditioning department of the Steel & Tube Div., Canton, Ohio.

Before, a floorman was needed to follow the crane and swing the loads into position. Now, a worm gear and electric motor do the job.



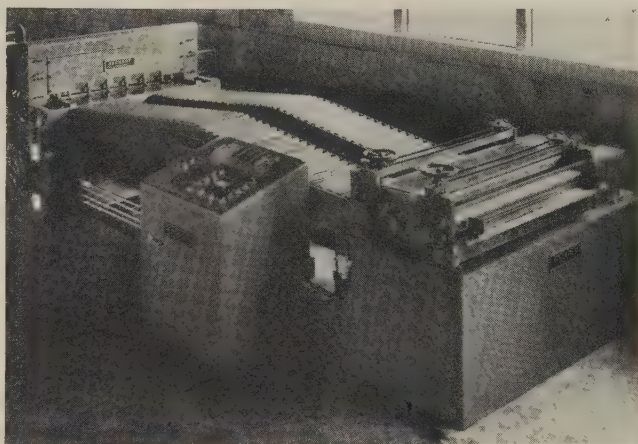
## Automatic Shearing Lines Provide Another Way To Economize

Coils of steel, stainless, aluminum, and other metals can be cut into sheets automatically on this equipment. It decoils, straightens, and shears any length from 3 in.

Installing a line in your plant will allow you to reduce steel inventories and warehouse space, realize the economy of buying coiled metal, and lower handling and labor costs. Being able to cut to blank size will decrease your scrap.

Equipment in the line includes a coil reel, straightening roll, hump table, shear, and conveyor. All units are wired into a console for electronic measuring.

Lines are offered in widths up to 6 ft and in metal thicknesses to 10 gage. Write: Secrest Machine Co., 1507 M St. N. W., Washington, D. C. Phone: Columbia 5-6696



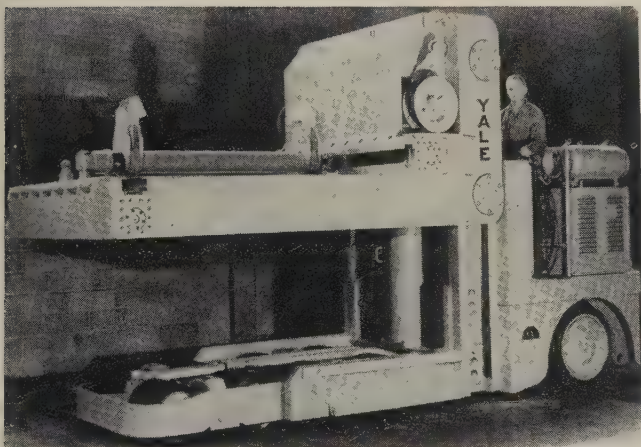
## Versatile Lift Truck Die Handler Loads Heavy Units

With this electric powered, die handling, lift truck you can end load or side load dies weighing 60,000 lb.

Bollard extensions allow you to accurately place the die in a press or storage. These extensions are added when extra thrust is necessary. They can be controlled individually, giving flexibility of die movement.

The die moving apparatus can be controlled from a pendant which can be carried around the truck.

End loading is done by an electric winch along the 96 in. length of the platform. In its lowered position, the platform is 18 in. from ground level, and has a lift of 75 in. Write: Yale Materials Handling Div., Yale & Towne Mfg. Co., 11000 Roosevelt Blvd., Philadelphia 15, Pa. Phone: Orchard 3-1200

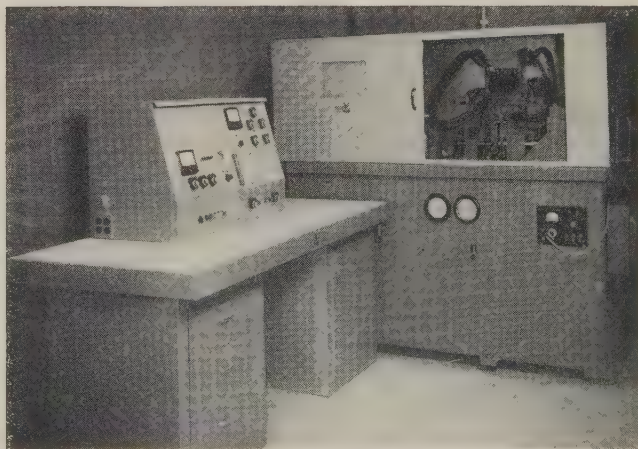


## Elevated Temperature Test Machine Has Wide Application

Model TM-1 provides a wide range of stress and strain rates at elevated temperatures. Mechanical properties of materials can be determined over temperature ranges extending to 3000° F and beyond.

With a capacity to 50,000 lb, the machine handles tension, compression, creep, and fatigue tests—on full-sized ASTM specimens. The unit is applicable to missile and powerplant structural studies.

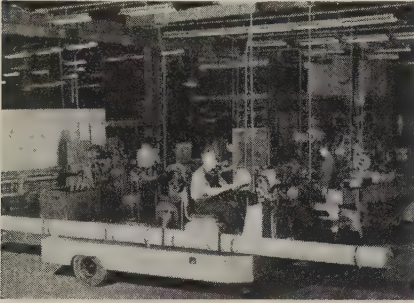
Electronically controlled servos automatically subject the specimens to any combination of rates of loading, elongation, and temperature. Ram rates of up to  $\frac{3}{4}$  ips, temperature rises of 200° F a second, and cyclic rates of 10 cps, are possible. Write: Special Products Project, Dept. 75, Marquardt Aircraft Co., 16555 Saticoy St., Van Nuys, Calif. Phone: State 1-2121





## Truck Is Rugged

The 4000 lb capacity, Model F40 platform truck has a hydraulic torque converter transmission. This provides a continuous flow of pow-



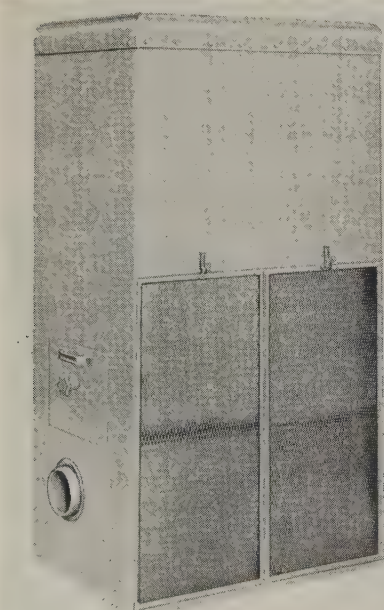
er to meet load conditions—and eliminates clutching and shifting.

It is powered by an air-cooled engine, and features automotive-type steering, and a spinproof differential.

The unit has a 42-in. freight bed that is 78 in. long behind the engine. The space at the right of the engine is 21 in. wide and 122 in. long. Write: Prime-Mover Co., Muscatine, Iowa.

## Plant Dust Collected

Compact Type M unit dust collectors are available in three sizes: 450, 900, and 1800 cfm. In all sizes, the dust-laden air is delivered to a centrifugal precleaner where all but the finest particles are removed. For final cleaning, the air passes through steel wool filters.



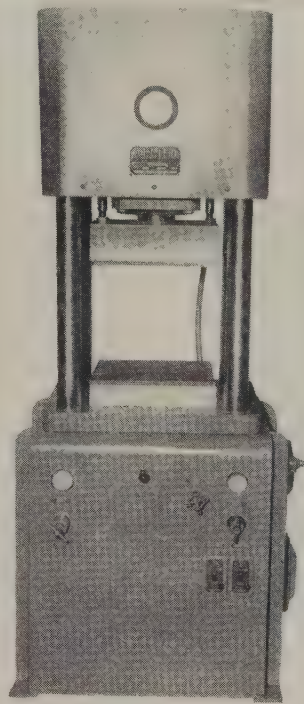
Dust receptacles are gasketed, sliding drawers that are secured with a handwheel to insure a leakproof seal. Write: Kirk & Blum Mfg. Co., 3100 Forrer St., Cincinnati 9, Ohio. Phone: Elmhurst 1-1400

## Press Approach Controlled

A 75-ton, down acting, hydraulic molding press has controlled speed of approach with stepless tonnage adjustment (from 5 to 75 tons).

The hydraulic system operates economically on shop air lines, and installation is quick and inexpensive.

The unit is available with heated (electrical or steam) platens, water cooled platens, or multiple platen arrangements. Working area is 13 x 13 in., with 12 in. of daylight, and



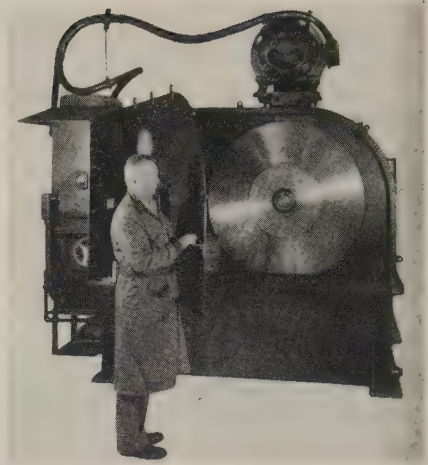
a 12-in. stroke. Write: Allied Engineering & Production Corp., 2421 Blanding Ave., Alameda, Calif. Phone: Lakehurst 3-6556

## Friction Sawing Improved

This friction saw incorporates an electronic feed. It has a built-in coolant system that assures cool edge, dry blade cutting, and one-piece construction that permits it to be used without an expensive pit.

Models are produced in 40, 75, and 150 hp for cutting structurals, fabricated sections, rails, and pipe.

The saw's electronic, variable



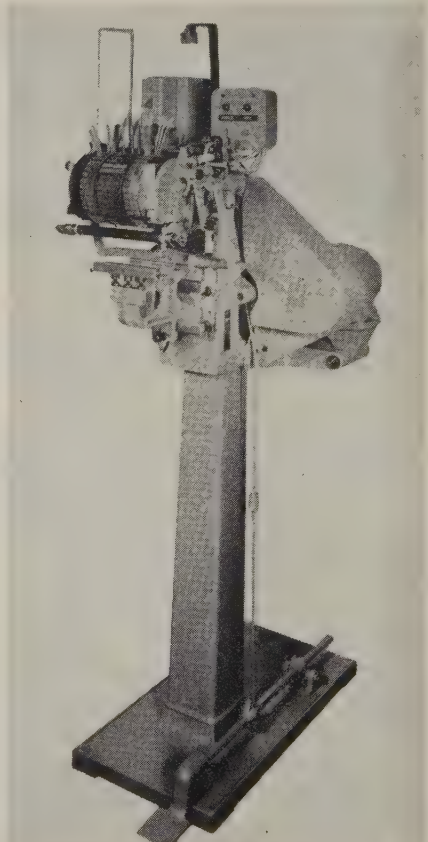
torque feed makes hydraulic oil lines, pumps, and storage tanks unnecessary. Write: Ty-Sa-Man Machine Co. Inc., 1103 White Ave., Knoxville, Tenn. Phone: 4-5471

## Imprints Marked Dry

Handling, stacking, or packing can be done immediately after marking with the Model 105-10H machine.

The Thermomark process uses a heated printing head and Touch Dry ink. The ink is converted from solid to liquid on a heated ink plate, and dries instantly upon contact with the article marked.

Speed of 80 to 100 imprints a





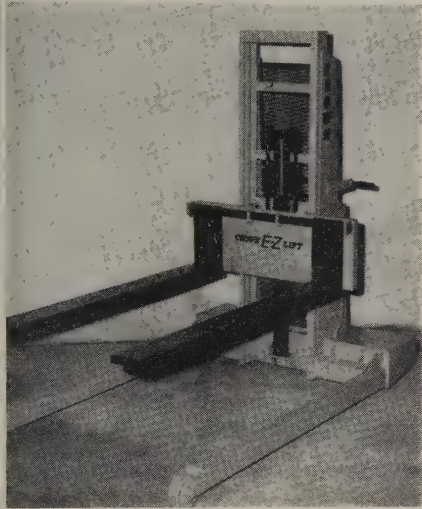
## NEW PRODUCTS and equipment

minute can be attained. *Write:* Markem Machine Co., Keene 52, N. H. *Phone:* Elmwood 2-1130

### Lift Is Battery Operated

The Model L-582 lift has adjustable forks, a lifting height of 60 in., and a capacity of 3000 lb.

Power for lifting is supplied by a



12-volt industrial battery which operates a motor and hydraulic pump. A built-in rectifier recharges the battery. It can be plugged into a 110 volt, 60 cycle outlet. *Write:* Crown Controls Co. Inc., New Bremen, Ohio.

### Header Vibration Lowered

These cold headers can be operated at high speeds, free of damaging vibration and excessive part replacement.

The solid cutter completely envelops the wire, providing a square, clean cutoff. This design is suitable to all materials, warm or cold.

The lubrication pressure system has a separate motor-driven pump. A metering-pin distributor directs the proper amount of oil to bearings, slides, and other essential points. *Write:* National Machinery Co., Tiffin, Ohio. *Phone:* Tiffin 5

### Crane Sold in Kit Form

These packaged underhung cranes are available in capacities from 1/2 ton to 10 tons with spans up to 50 ft. Each kit includes two completely as-

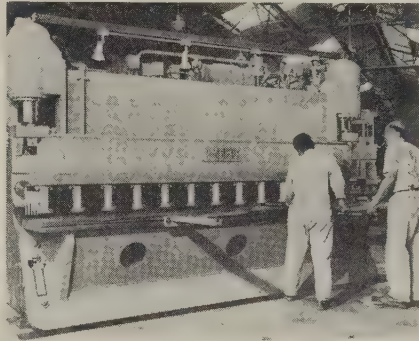


sembled end trucks; required cross-shaft bracket, bearing assemblies, and shaft couplings; 20-ft hand chain; chain wheel with guide; and assembly instructions.

The bridge I-beam and shaft are purchased locally. No special tools or jigs are required to assemble the units. *Write:* Shaw-Box Crane & Hoist Div., Manning, Maxwell & Moore Inc., Muskegon, Mich. *Phone:* 3-1311

### Shear Rake Adjustable

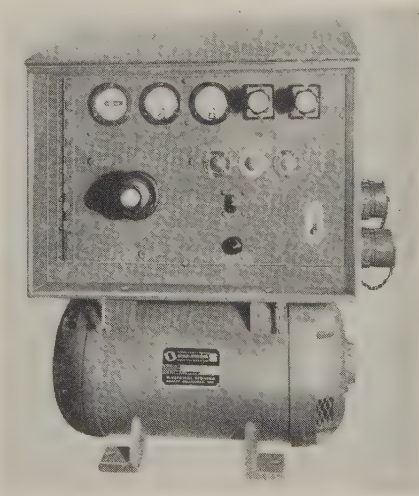
This adjustable rake hydraulic shear cuts metal from 0.024-in. aluminum to 5/8-in. mild steel. Knife clearance can be changed within a



minute. *Write:* Pacific Industrial Mfg. Co., 848 49th Ave., Oakland 1, Calif. *Phone:* Andover 1-8303

### Provides 400-Cycle Power

These high frequency, motor alternator sets with 400-cycle alternators have no commutators, slip rings, or rotor windings. They supply power for high frequency ma-

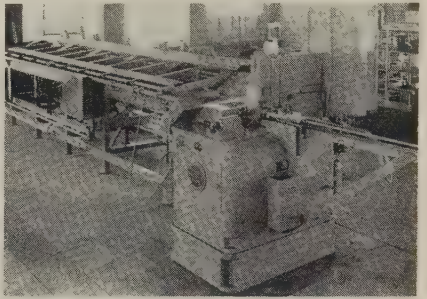


chine tools, computers, and other applications requiring this cycle rate. *Write:* Electrical Div., Safety Industries Inc., P. O. Box 904, New Haven 4, Conn. *Phone:* University 5-3171

### Loads and Feeds Stock

This automatic loader and feeder eliminates manual handling of stock lengths of tubing and round stock.

It will hold 15,000 lb of material



and automatically feed the entire load through the machine. *Write:* Grieder Industries Inc., Bowling Green, Ohio.

### Tighten Conveyor Curves

Overhead conveyor horizontal curves can be had in 6, 9, and 12 in. radiuses.

These tight turns, developed for systems where it is advantageous to return a line on a short radius, are



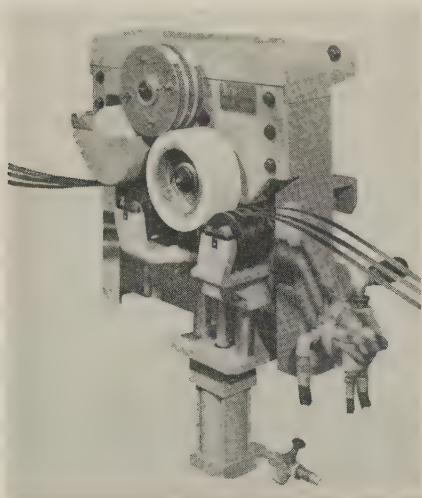
particularly desirable for use in ovens, drying areas, and storage lines. *Write:* Chainveyor Corp., E. Washington Blvd., Los Angeles 22, Calif. *Phone:* Raymond 3-4741

### Prints Three Steel Bands

Manufacturers of steel bands and other similar products can print three coils of stock simultaneously with this in-line offset printing unit.

Incorporating individual type wheels holding identical or differing





data, the unit can print one, two, or three bands simultaneously with characters from  $\frac{1}{8}$  to  $\frac{3}{4}$  in.

The machine will accommodate a range of band widths and stocks. Write: Jas. H. Matthews & Co., 3746 Forbes Ave., Pittsburgh 13, Pa. Phone: Museum 1-8500

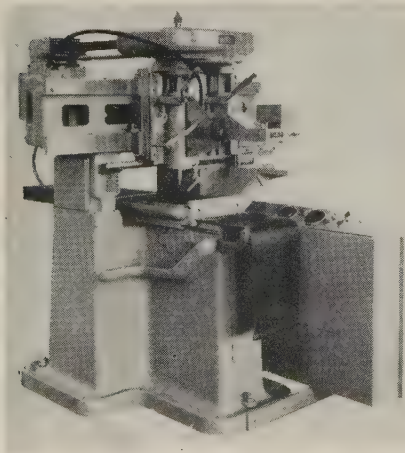
## Profiles Automatically

The Magnespark profiler operates from a sheet steel profile template to produce any two dimensional, straight-line, or irregular contour shape at speeds up to 60 ipm.

It can trace at a preset constant surface speed, thus producing better surface finish as well as assuring longer cutting tool life.

Sensitivity of the two spark gap pickups in the tracing head take only 0.0002 in. stylus deflection to activate the table and slide. Simple tooling and zero tracer pressure permit use of soft steel templates.

The control cabinet is wired to accommodate automatic cycling com-



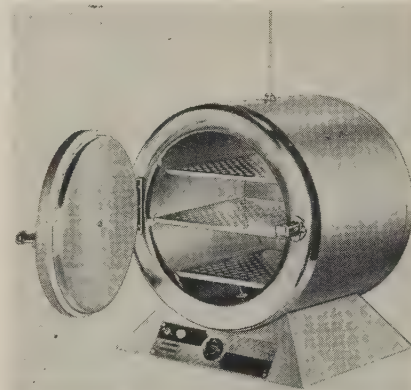
ponents. Write: Pratt & Whitney Co. Inc., West Hartford 1, Conn. Phone: Adams 3-7561

## Provides Uniform Heat

Design of the Circ-O-Therm oven, for temperatures to 482° F, assures uniform heat (no cold corners or hot spots).

Applications include low temperature drawing, heating for joggling in aluminum forming, age hardening aluminum and magnesium alloys, shrink fitting small gears, and hydrogen embrittlement relief after plating.

The oven operates economically on 115 or 230 volts ac. Its work

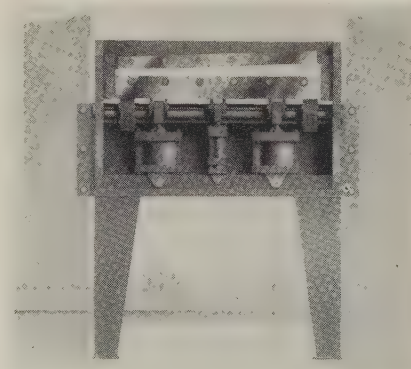


chamber is 13 in. deep and 15 in. in diameter. Write: Hevi-Duty Electric Co., Milwaukee 1, Wis. Phone: West 3-2756

## Strip Fishtails Sheared

Air operated, mill mounted shears cut fishtails from leading and trailing ends of strip and sheets.

Compact and light, these shears



are bolted directly to mill housings. They are made in models to cut 24 to 84 in. wide materials. Write: Curry Air Shear Corp., 3519 Bigelow Blvd., Pittsburgh 13, Pa. Phone: Atlantic 1-1370

## Marker Handled Easily

A portable pneumatic marker (Style C) is for hot and cold metal marking. It's a lightweight, safe



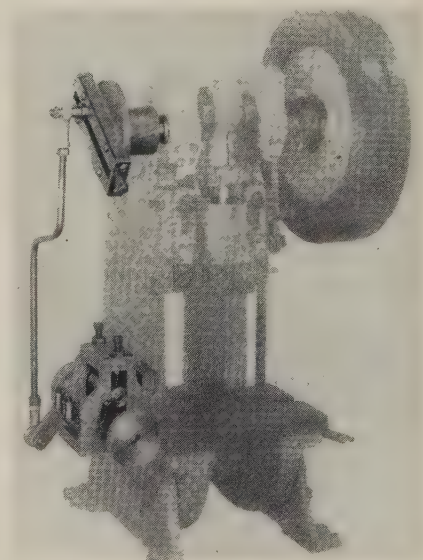
tool that assures clean impressions.

Accurate impressions free of chatter marks can be made on heavy castings and forgings. Air pressure as low as 50 psi will operate the hammer. It has its own surge chamber so that distance from the main air supply does not affect uniformity. Write: Pannier Corp., 220 Sandusky St., Pittsburgh 12, Pa. Phone: Fairfax 1-5185

## Roll Feed Is Accurate

A low cost roll feed fits bench or floor type presses up to 7½-ton capacity. It assures accuracy on normal or high speed presswork.

It can handle material up to 2 in.



wide and 0.100 in. thick. The unit is supplied with roller lift and screw adjustment eccentric. Write: Durrant Tool Co., Thurbers Avenue, Providence, R. I. Phone: Stuart 1-7800

## Tractor Hauls Live Skids

The battery-powered Powrworker grip tractor will handle live skids of any standard height. A hydraulically operated jaw clamps on top





## Stanscrew service prevents problem for manufacturer of journal bearings

The wise manufacturer eliminates any possibility of fastener breakage *before* it can become a serious and expensive field problem.

As a prime example, a leading manufacturer of sealed cartridge journal bearings was concerned about the cap screws used to hold one essential part—the thrust cap—in place. They knew the lateral movements of a railroad car resulted in thrust on this cap, imposing extremely heavy loads on these fasteners.

A call to their industrial distributor soon had a Stanscrew fastener specialist on the job. He recommended continued use of a torque wrench and worked out the proper setting so that each fastener carried its rated load. Subsequent laboratory tests proved these recommended torque settings insured against fastener breakage.

The manufacturer accepted these recommendations . . . and thus eliminated a potentially

serious problem before it could develop. The torque settings and technique developed by the Stanscrew representative have been incorporated in the company's instruction and maintenance manual to insure proper maintenance procedures.

Technical assistance like this is just one of the many reasons more and more manufacturers are standardizing on Stanscrew. Trained specialists, backed by an outstanding engineering staff, can solve your particular fastener problem. In addition to assuring the dependability of your product, often they can save you money . . . for example by substituting a standard fastener for a costly "special".

*Call your Stanscrew distributor today for the answers to your fastener problems. He will see that the Stanscrew Fastener Specialist visits you without delay.*



**STANDARD SCREW COMPANY**

**FASTENERS**

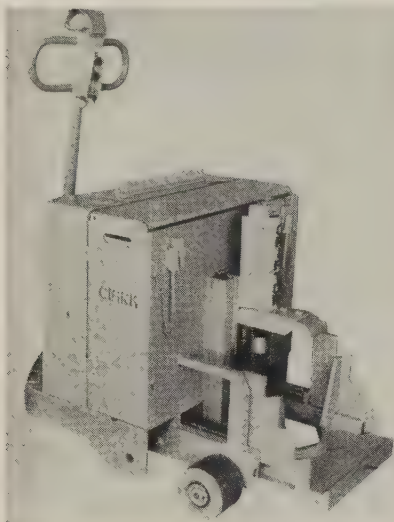
**CHICAGO** | THE CHICAGO SCREW COMPANY, BELLWOOD, ILLINOIS

**HMS** | HARTFORD MACHINE SCREW COMPANY, HARTFORD, CONNECTICUT

**WESTERN** | THE WESTERN AUTOMATIC MACHINE SCREW COMPANY, ELYRIA, OHIO

2701 Washington Boulevard, Bellwood, Illinois





of the skid and on a notched plate under the skid.

The machine has a drawbar pull of 200 lb, a breakaway rating of 700 lb.

It will travel 2 mph loaded.

Brakes are automatically applied when the steering handle is in vertical or horizontal position. The handle returns to vertical when released. *Write:* Industrial Truck Div., Clark Equipment Co., Battle Creek, Mich. *Phone:* Woodward 2-6561

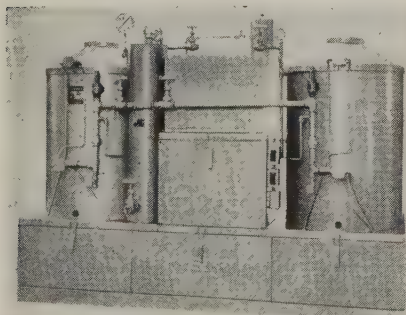
## Steam in 2 to 3 Minutes

Model 220 steam generator has two heater coils and burners with individual controls.

Either half may be operated independently.

Continuous coil construction enables it to produce steam in 2 to 3 minutes from a cold start. It is the flash type with 30 boiler hp.

The generator is a complete package. No special foundations or walled-in areas are necessary. *Write:* Malsbary Mfg. Co., 845 92nd Ave., Oakland 3, Calif. *Phone:* Trinidad 2-7272

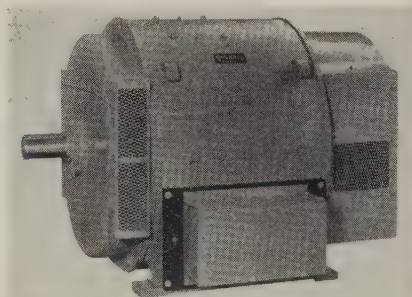


## Frame Size Increased

With the addition of the Series 4230 DC frame, this firm can supply generators in ratings through 300 kw, 1200 rpm. Two-wire 250-volt, three-wire 125/250-volt, or 600-volt models are available.

Bracketed ball bearing design and all-steel fabrication are featured. Single or two-bearing units, shunt or compound-wound types are offered.

The generators meet all standards of NEMA and ASA-C50, and are available as marine generators to meet either ABS, Coast Guard,



AIEE-45, or Lloyd's requirements. *Write:* Columbia Electric Mfg. Co., 4519 Hamilton Ave., Cleveland 14, Ohio. *Phone:* Endicott 1-8060

## Drives Use Static Power

Ultraflex packaged drives utilize light, compact, static power components to replace the conventional motor-generator set.

Ultraflex conversion units elimi-



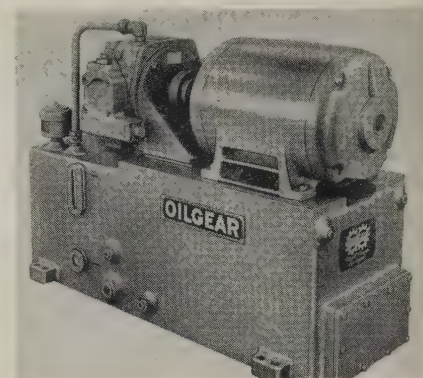
nate all bearings, brushes, commutators, shafts, and couplings of rotary type, direct current power sources with a consequent reduction in installation and maintenance costs.

The drives are available in two forms—the Ultraflex E, a 1 to 40 hp electronic adjustable speed drive; and the Ultraflex M, a 1 to 200 hp magnetic amplifier adjustable speed drive. *Write:* Cutler-Hammer Inc.,

320 N. 12th St., Milwaukee 1, Wis.  
*Phone:* Broadway 1-7800

## Pump Saves Power

The ANP pump can be used to power presses, diecasting and clamp-



ing machines, as well as transfer machines and hydraulic drives.

When the adjustable preset pressure is reached on work, the control hydraulically reduces the pump volume to slip stroke to save input power, reduce heat, and hold pressure.

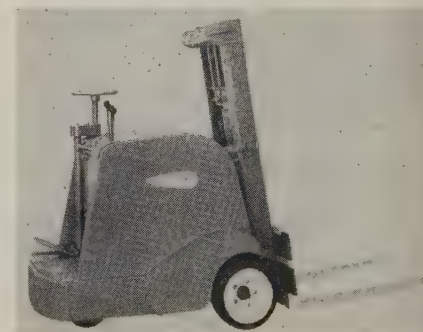
The pump is supplied for clockwise or counterclockwise rotation. *Write:* Oilgear Co., 1571T W. Pierce St., Milwaukee 4, Wis. *Phone:* Mitchell 5-6715

## Truck Maintenance Eased

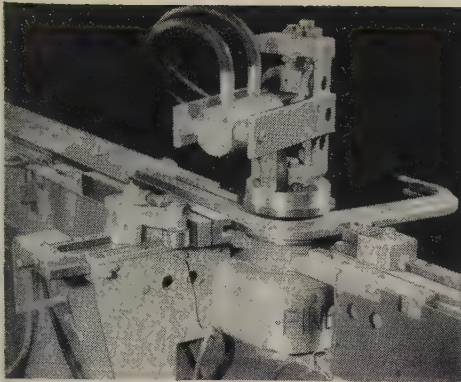
The Brute, a standup electric truck, is furnished in 2000, 2500, and 3000 lb capacities at 24-in. load centers.

All electrical controls and hydraulic controls can be exposed in less than a minute by unlocking and swinging the steering post to the rear, and lifting the hinged truck top 90 degrees. All controls are on this lid.

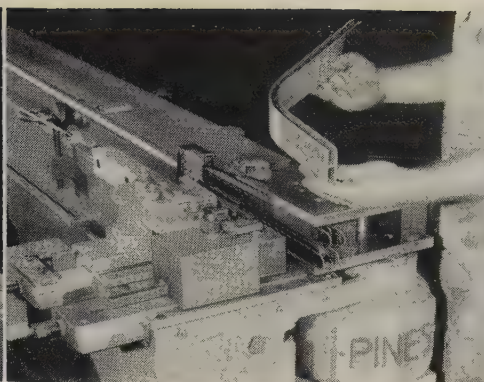
The standard mast has 33 in. free lift with a total lift height of 98 in. *Write:* Hustler Corp., Willoughby, Ohio. *Phone:* Whitehall 2-1757







**ROLLED-STEEL SECTION**—90° bends in 1 3/4" x 1 3/4" x .059 stock produce automobile seat frames. Split dies with automatic actuator make possible speeds up to 500 bends per hour.

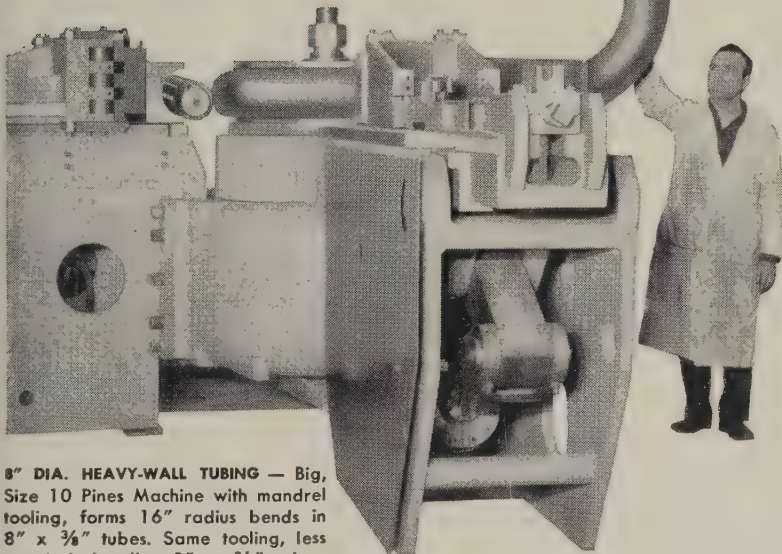


**ALUMINUM EXTRUSION** — Window awning ribs are accurately formed on a 5 3/4" inside radius using leaf-spring mandrels. Split-die tooling speeds loading and unloading operations.



**ALUMINUM TUBING** — Bending four 1" O.D. x .035 workpieces simultaneously on a 3 1/2" CLR produces up to 1200 pieces per hour for large furniture plant.

# 7 WAYS TO CUT COST Production Bending... the "PINES-WAY"



**8" DIA. HEAVY-WALL TUBING** — Big, Size 10 Pines Machine with mandrel tooling, forms 16" radius bends in 8" x 3/4" tubes. Same tooling, less mandrel, handles 8" x 3/4" tubes. Holds flattening to 8%, thinning on outside to 10%.

Hundreds of metalworking plants have found it possible to effect substantial savings by applying Pines Machines in fabricating a wide range of tubing, pipe, extruded or rolled-shaped parts. As illustrated, they are profitably used today on large or small work, and on both short as well as long run jobs. Production-wise and cost-wise, you will find bending the "Pines-Way" is a fast, accurate metal forming method. For assistance with any job or a cost analysis, call on Pines Engineers without obligation.

## Write FOR FREE DATA SHEETS

For additional cost cutting ideas write for free copies of "Pines News" — illustrates latest bending techniques applied to actual jobs.



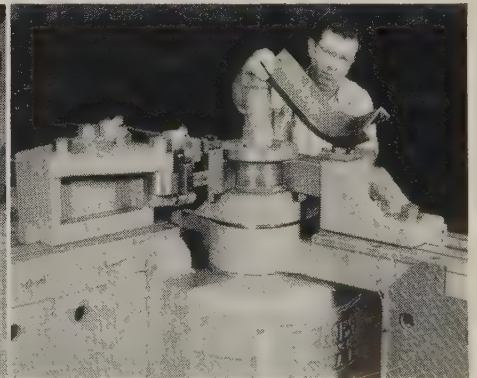
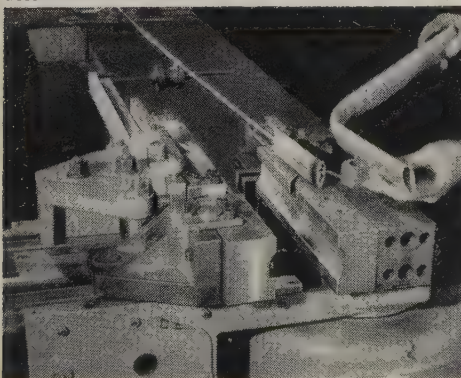
**PINES** ENGINEERING CO., INC.

Specialists in Tube Fabricating Machinery 662 WALNUT • AURORA, ILLINOIS

**AIRFOIL SHAPE**—1 3/16" x 2 1/16" aluminum aircraft struts are now rapidly formed at production speeds. Segmented mandrel and wiper die insure smooth, accurate 90° bends on 4 1/4" CLR.

**HEAT EXCHANGER COILS** — This tooling set-up produces accurate 180° serpentine bends in 2" O.D. x .065 tubing on 2 1/2" CLR. Operating speed is 150 bends per hour.

**STEEL CHANNELS** — Bending heavy 4" x 5.40# steel channels on a 3 1/2" I.R. for truck frames is another example of the versatility and efficiency of Pines Machines and tooling methods.





# NEW Literature

Write directly to the company for a copy

## Circuit Breakers

This catalog contains pricing, dimensional, and application information on an extensive line of molded case and large air circuit breakers. Included are descriptions of I-T-E switchgear products, Transfo-Units, and high voltage switching devices. I-T-E Circuit Breaker Co., 19th and Hamilton Street, Philadelphia 30, Pa.

## Malfunction Detector

Bulletin RF-586 explains the functions of the Model 65 Vibraswitch malfunction detector. The unit provides protection for large motors, pumps, compressors, and other rotating equipment. Aeronautical & Instrument Div., Robertshaw-Fulton Controls Co., Euclid Avenue at Santa Ana Freeway, Anaheim, Calif.

## Workholding Devices

A catalog describes DTC and Burnerd workholding devices. Items include adapters, vises, angle tables, arbors, chucks, and magnetic chucks. DeWitt Equipment Corp., 190 Elizabeth Ave., Newark 8, N. J.

## Mechanical Tubing

Simplified production can result from proper selection of mechanical tubing. Bulletin TB-418 tells how. Included are industry tolerance tables for cold drawn and hot finished seamless carbon steel tubing of this type. Tubular Products Div., Babcock & Wilcox Co., Beaver Falls, Pa.

## Furnaces

Catalog 158 (200 pages) describes electric ovens, furnaces, baths, environmental cabinets, related temperature control equipment, and accessories for laboratory, pilot plant, and production. Blue M Electric Co., 138th and Chatham Street, Blue Island, Ill.

## Metal-Ceramics

A 12-page booklet contains physical, mechanical, and chemical properties, and typical applications of cermets. They are used at temperatures to 2800° F to withstand thermal shock, wetting by molten metals, oxidation, abrasion, erosion, and high temperature attack by corrosive chemicals. Haynes Stellite Co., division of Union Carbide Corp., Kokomo, Ind.

## Lathe Control Unit

The De Silvey Director is for automatic control and operation of ram-type turret lathes. The device allows manual and semiautomatic operation as well as automatic. A catalog describes the unit. De Silvey Corp., 201 Pennsylvania Ave., East Aurora, N. Y.

## Tube Flaring

Catalog Sheet No. 1145A15 covers the Portaflare tool—a portable, motor driven unit for flaring tubing easily and accurately in the shop or field. It can be clamped in a bench vise. Parker Fittings

& Hose Div., Parker-Hannifin Corp., 17325 Euclid Ave., Cleveland 12, Ohio.

## Authorized Service

A bulletin lists authorized Lima service stations throughout the U. S. and Canada. Over 200 stations provide warranty service on electric motors, gearshift drives, and speed reducers. Dept. 149, Lima Electric Motor Co. Inc., Lima, Ohio.

## Punched-Card Computer

Manual U-1471, "Graphical Presentation with the Univac 120 Punched-Card Electronic Computer," describes graphical presentation to observe trends and variations in a particular set of data. The method also allows spotting at a glance any discrepancy between desired results and computed results. Remington Rand Div., Sperry Rand Corp., 315 Fourth Ave., New York 10, N. Y.

## Bearing Loads

Calculation of bearing loads for hot and cold rolling mills is described in a 16-page catalog, 457. SKF Industries Inc., Philadelphia 32, Pa.

## High Reliability Factor

This 15-page brochure introduces a new symbol to the industrial scene, hiRf, standing for high reliability factor. It is made up of eight elements: Evaluation, research, design, manufacturing, quality control, service, people, and the intangibles. The hiRf symbol is used as a mark of "predictable excellence" in company products. Standard Pressed Steel Co., Jenkintown, Pa.

## Superalloy Steel

This book pictorially treats the many steps involved in producing custommade steel products. It starts with the melting of the metal, discussing open hearth and electric furnaces, and consumable electrode vacuum melting. Forging, heat treating, machining, testing, and inspection are thoroughly covered. Dept. S-7, Midvale-Heppenstall Co., Nicetown, Philadelphia, Pa.

## Hydraulic Cylinders

Bulletin No. 1258 details a line of stressed tierod design hydraulic cylinders. These C5H series units are for heavy duty, 3000 to 5000 psi applications. Sheffer Corp., 326 W. Wyoming Ave., Cincinnati 15, Ohio.

## Chipless Shaping

Moving metal as opposed to removing it is discussed in Bulletin 900-P2. Upset forging, stamping, and the Rotoform process are covered. Commercial Shearing & Stamping Co., Youngstown 1, Ohio.

## Structural Testing

The subject of testing missile components in the laboratory by using speci-

ally designed equipment and different testing techniques is covered in this booklet. Missile and Ordnance Systems Dept., General Electric Co., Room 5B, 3198 Chestnut St., Philadelphia 4, Pa.

## Barrel Finishing

Bulletin No. 158 describes the full line of Lorco equipment for precision barrel finishing. Mechanized screens; chip bins; hoist pans; centrifugal dryers; vapor degreasers; and a triple action, tilting, polygonal barrel are covered. Lord Chemical Co., 2068 S. Queen St., York, Pa.

## Vertical Profiler

A brochure describes Magnespark, a tracer control for automatic, 360 degree, profile milling operations. It works from a sheet steel, profile template to produce any two-dimensional shape. Pratt & Whitney Co. Inc., Charter Oak Boulevard, West Hartford 1, Conn.



## NEW BOOKS

*Estimating Manual for the Screw Machine Products Industry*, National Screw Machine Products Association, 2860 E. 130th St., Cleveland 20, Ohio. 104 pages, \$7.95

This manual is designed to provide a modern, thorough guide to estimating screw machine products for both independent producers and company-operated screw machine departments. The purpose behind its two-year preparation was the improvement of estimating practices in all companies. Topics covered include: Basic quoting procedures and qualifications; materials; estimating production on various equipment; setup, operating, administrative costs; specific examples of estimating; and estimating forms and aids.

*Cost Control through Electronic Data Processing*, Phil Carroll, Research Div., Society for Advancement of Management, 74 Fifth Ave., New York 11, N. Y. 32 pages, \$1.50

Covered in this monograph are the practical ground rules of question asking (programming) and corrective managerial action in the use of electronic data processing as a cost-control instrument. The author covers systems and procedures, sales forecasts, production scheduling and control, expense budgeting, direct and indirect costing, and the development of decision-making ability in the managerial staff.

*Constitution of Binary Alloys*, Max Hansen, McGraw-Hill Book Co. Inc., 330 W. 42nd St., New York 36, N. Y. 1305 pages, \$32.50

This revision and translation of the classic German work provides a source of reliable data concerning the constitution of binary alloy systems (phase diagrams) and the crystal structure of metallic phases. Widely scattered information in the world's metallurgical, physical, chemical, and crystallographical literature is analyzed and critically evaluated. The new edition includes 1286 systems and 684 diagrams.



## Buyers Accept Higher Prices

STEEL DEMAND is picking up in spite of higher prices. The gains are small but nonetheless indicative of the market's latent strength. Consumers are buying steel because they need it. By the end of the month, surplus inventories will be liquidated, and users will be ordering as much steel as they consume.

**FEARS UNFOUNDED**—Although the industry has long maintained that price fluctuations have little effect on demand, evidence of continued strength after the Aug. 1 increase was reassuring. Sen. Estes Kefauver (D., Tenn.) condemned the price hike in advance because it would "undoubtedly" reduce demand and production.

**FEW COMPLAINTS**—Consumers have been expecting higher prices since July 1 when the industry absorbed added employment costs (25 cents per manhour or \$5 per ton). When steelmakers announced price hikes averaging \$4.50 a ton, buyers were glad the uncertainties had been resolved and thankful that the markup was small.

"Our customers didn't stand up and shout hooray," admits Logan T. Johnston, executive vice president of Armco Steel Corp., "but their reaction was generally favorable.

"Of the thousands of users we serve, only two have been critical. Some have written Senator Kefauver that they support our move."

**STAINLESS MOVES LAST**—Although it was quick to follow Armco's lead on flat-rolled products and not at all reticent about making some price boosts of its own, Republic Steel Corp. delayed action on stainless. Some observers thought competition from aluminum was a deterrent, but others point out that Alcoa jacked up its prices as much as the steelmakers. The best explanation is probably the simplest: Stainless has a complicated price structure that can't be revised in a hurry.

**BLOUGH MAKES FORECAST**—Industry steel-making operations will be at 54 per cent of capacity during the third quarter and in the 60 per cent range during the fourth, predicts Roger M. Blough, U. S. Steel Corp.'s chairman. "We believe it will be some time before we see any evidence of a vigorous pickup on our order books. Improvement in the latter part of this year is

not going to be as rapid as some people seem to think."

**HOMER SEES UPTURN**—Taking a more optimistic view, Arthur B. Homer, president of Bethlehem Steel Corp., sees moderate and continued improvement in steel demand during the third and fourth quarters. Bethlehem will operate at 60 to 70 per cent of capacity during the last three months of the year, he predicts. Shipments to the construction and manufacturing industries will be good, he believes.

**WAREHOUSES WELL STOCKED**—Steel service centers have better sales than they expected in July, but they're not about to resume ordering big tonnages from mills. Inventories remain at or above the normal level of 120 days. Midwest firms report peak activity in reinforcing bars. Part of the demand is being generated by construction projects that were delayed by bad weather in June.

**PRODUCTION STUDY**—Steelmaking operations held at 59 per cent of capacity last week. Production was about 1,593,000 net tons of steel for ingots and castings. Scrap continued its bullish trend. STEEL's composite on the prime grade jumped to \$42 a ton, up \$2.

## WHERE TO FIND MARKETS & PRICES

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## How Chicago Steel Service provides better service with a **NOBLE *Automatic* PLATE HANDLER**

A plate shear is essentially a fast-operating machine, but out-dated crane and sling "man-handling" methods of feeding it can really bottleneck the operation. This is bad enough in a fabricating plant, but even worse in a steel warehouse where prompt delivery is the sacred link that wins and holds customers. Chicago Steel Service Company, "The House of Stainless," did something about it. They installed a fully-automatic NOBLE Plate Handler that picks up sheet or plate from any selected pile, carries it to the shear feed table and deposits it—at the touch of a button. It has a capacity of 3,000 lbs., is equipped with a rotatable lift beam so sheet can be fed for either edge or end shearing. It handles plate to 10' in length edgewise, up to 30' or more lengthwise. Its vacuum cups handle any type

of sheet or plate (even austenitic grades magnets can't touch) without marring or jimmying the edges.

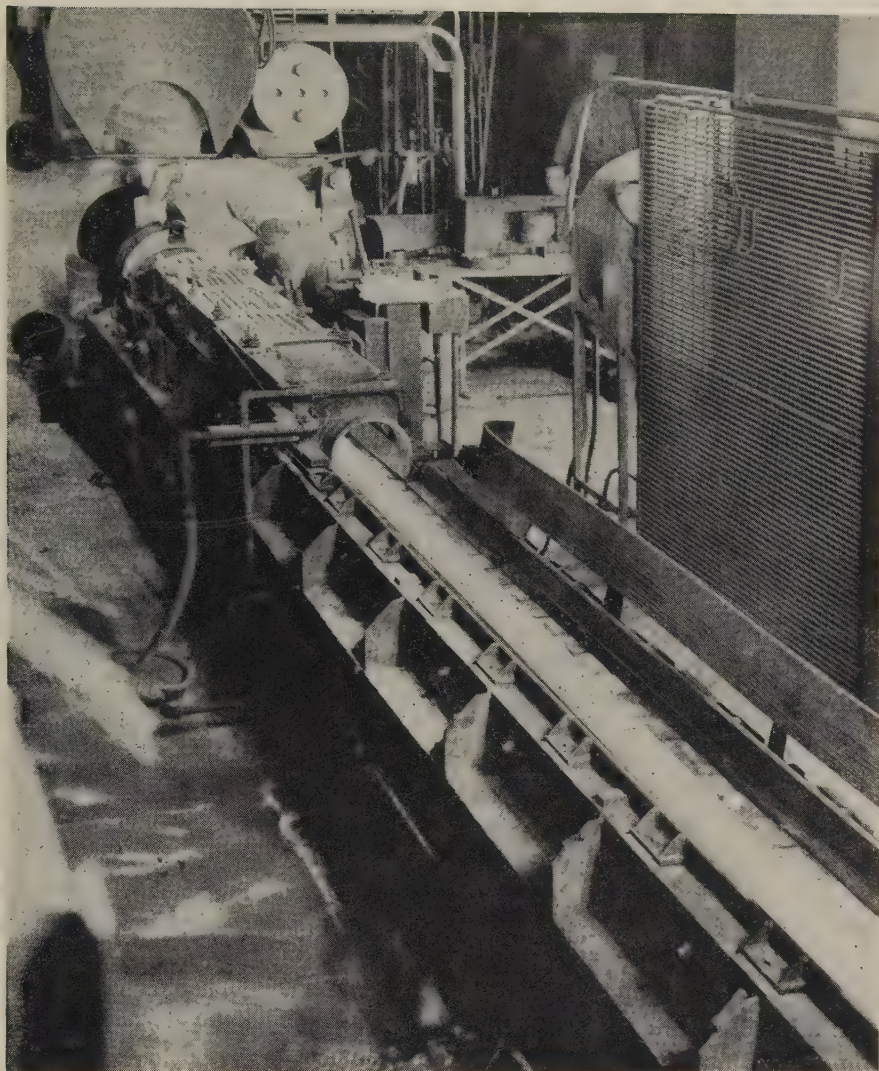
Results? Far faster shearing for earlier deliveries, an efficient crew that spends its time shearing safely and profitably rather than wrestling plate, no crane standby time—and happier customers.

If you are fabricating or processing sheet or plate, it may pay you well to investigate NOBLE handling equipment. Bulletin 500 gives the facts—why not write for your copy now? Please address Dep't. S-8.

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Here is stainless being extruded at National Tube Div., U. S. Steel Corp.

## Extrusion Markets Needed

Change in defense emphasis from aircraft to missiles has hurt this industry. Companies hope to fill the gap with architectural and other commercial applications

STEEL EXTRUSIONS have a short past, a disappointing present, and a bright future.

Introduced only six years ago, they found quick acceptance in the jet aircraft industry. Now they're in the doldrums because of the government's decision to buy fewer planes and more missiles. A bigger non-military market is needed.

One extruder's experience is typical: "We installed a press in 1952,

hit a production peak in 1956 which continued until the fourth quarter of 1957. Since then, we've been going downhill with the industry. About 90 per cent of our output goes to the aircraft companies. During the spring of 1957, they began switching to missiles. 'Birds' don't require the same kind of parts as planes, and they're not being built in volume."

Few Producers—Leading manu-

facturers of steel extrusions include Allegheny Ludlum Steel Corp., Watervliet, N. Y.; Babcock & Wilcox Co., Beaver Falls, Pa.; National Tube Div., U. S. Steel Corp., Gary, Ind.; Jones & Laughlin Steel Corp., Pittsburgh; Curtiss-Wright Corp., Buffalo; H. M. Harper Co., Morton Grove, Ill.; and Canton Drop Forging & Mfg. Co., Canton, Ohio.

The absence of industry statistics makes it difficult to compare 1958 production to that of previous years, but major producers say their shipments are down substantially. Solid shapes are depressed by aircraft cut-backs, and hollows have taken the same dip as all tubular sales. H. M. Harper Co. is selling more shapes this year than last, but only because 1957 was the first year it extruded shapes.

At Babcock & Wilcox, the story's much the same. Having used its press for several years as a hot-working tool in tubemaking, B&W began production of stainless solids in July, 1957. "We're making a lot more shapes this year than last," says a sales executive, "but the only way to go was up."

**Selling Points** — Extrusions had quick success in jet aircraft because they required little machining and reduced scrap. Used mainly for engine rings and airframe sections, they saved the plane builders millions.

Proponents claim that extrusions: 1. Permit design flexibility. 2. Are available on short leadtime. 3. Eliminate the cost of special rolls for nonstandard sections. 4. Can be bought in small quantities. (Allegheny Ludlum will accept a 40-lb order; Babcock & Wilcox, 500 lb; National Tube, 1 ton.)

Blanks from which stainless tubing is made can be produced by hot extrusion. Previously, they were made only by horizontal piercing. The extrusion process is most attractive in producing irregular, hollow shapes in long, bar form. They can't be made economically by any other method, extruders claim.

**Lubricants in Use** — Most extruders lubricate their billets by the Ugine-Sejournet process (rolling them down a runway covered with glass particles and ramming them against a spun glass pad. "Other lubricants have been tried, and many are still being evaluated," says Allegheny Ludlum, "but none



offers the many desirable features of molten glass."

Curtiss-Wright Corp. disagrees. Says a company spokesman: "We're getting equally good results from our own recipes — mixtures of graphite, bentonite, molybdenum disulfide, and other ingredients—that we apply in a spray. Using glass makes dimensional control difficult for there must be space between the die and the workpiece." Canton Drop Forging & Mfg. Co. uses molten salt.

**Old Markets and New** — "We hope to recover business through nonaircraft markets," says one sales executive. "They include architectural applications and the chemical, refining, dairy, food processing, and business machine industries."

Earle A. Channer, vice president of H. M. Harper Co., thinks the architectural market will have the greatest growth but says aircraft applications are promising, too, especially for light stainless parts. "High temperature alloys will eventually be used for airframe sections," says Allegheny Ludlum, "and we'll extrude them."

Curtiss-Wright is using its 12,000-ton press to make pressure tubes for AEC reactors. It's quoting on rail sections (now being rolled and machined) and on heavy structural members (now being welded) for earthmoving machinery.

## Steel Bars . . .

Bar Prices, Page 107

Most market observers don't think last week's boost in merchant bar prices will have any effect on buying. Ordering is expected to be dictated largely by consumers' needs over coming months; inventories are expected to be built up moderately later in the year if mill deliveries tend to become more extended. There has been virtually no hedge buying since June.

Republic Steel Corp. led the price upturn on bars. It increased hot-rolled carbon bars \$5 a ton to \$5.675 per 100 lb; hot-rolled alloy bars, \$5 to \$6.725; cold-finished carbon, \$7 to \$7.65; and cold-finished alloy, \$5 to \$9.025.

The farm equipment industry continues to buy steel at a time when there is usually a seasonal let-down. This industry is optimistic and expects business will gain 5

to 10 per cent over last year's.

There is little quickening in demand on appliance account, but automotive suppliers are placing orders for cold-finished bars for September and fourth quarter delivery. Up to now, auto suppliers were not figuring much in current steel buying.

Inland Steel Co.'s delivery schedule shows rail steel bars extend two to four weeks.

## Reinforcing Bars . . .

Reinforcing Bar Prices, Page 107

Leading producers have raised prices on reinforcing steel bars \$5 a ton; the advance is expected to extend to fabricators' quotations. Republic Steel Corp. initiated the increase, effective Aug. 4.

One importer in the Southwest has raised prices on reinforcing material \$10 a ton.

Among construction steel products, demand is heaviest for concrete reinforcing bars in New England. Highway mesh volume is also increasing, although expected tonnage for the federal road program has not reached earlier estimates.

In addition to public school requirements, many higher educational institutions are expanding facilities, and, in most instances, proposed structures are of reinforced concrete design.

Rolling mill executives in the Pacific Northwest report operations are continuing at about the second quarter rate. Highway projects in the district are absorbing sizable tonnage.

## Wire . . .

Wire Prices, Pages 109 & 110

Although only a few wire product prices were advanced in the initial upward movement in this market last week, expectations are that other items will be advanced shortly. Republic Steel Corp. initiated the advance on hot-rolled carbon wire rods, manufacturers' drawn wire, standard high carbon spring wire, and M.B. high carbon wire.

Wire rods are quoted at \$6.40 per 100 lb, up \$5 a ton; manufacturers' drawn wire, \$8 per 100 lb, \$7 a ton; standard high carbon spring wire, \$9.75 per 100 lb, and \$9 a ton; M.B. high carbon wire, \$9.75 per 100 lb, up \$9 a ton.

"We shipped more wire to manufacturers last month than we expected," a Pittsburgh district mill reports. "August shipments should be 20 per cent better than July's, and we ought to have another 25 per cent gain in September. The automotive companies have low inventories, but they aren't buying ahead. Their part suppliers are still waiting for releases."

Wiremakers won't be surprised if some of their customers complain about the higher prices, but they don't think the increases will lessen demand.

"Economic conditions are the controlling factor," said one sales official. "If the price hikes hurt us, it will be because of buyers' resistance to the increased cost of steel products that account for most of the tonnage in consumer durables. We won't lose any wire business to the aluminum people. They raised their prices more than we did."

## Sheets, Strip . . .

Sheet & Strip Prices, Pages 108 & 109

Despite the upward adjustment in prices, demand for sheets is increasing. Most consumers were resigned to a price increase some weeks back, but they were looking for it on July 1. More recently, they thought it would come around Labor Day.

Sheet and strip price increases were initiated by Armco Steel Corp., Middletown, Ohio, July 31. All other leading producers followed shortly. New prices: Hot-rolled carbon sheets and strip, \$5.10 per 100 pounds, up \$3.50 a ton; cold-rolled sheets, \$6.275, up \$4.50; enameling sheets, \$6.775, up \$3; galvanized sheets, \$6.875, up \$5.50; long terne sheets, \$7.225, up \$4.50.

Several other sheet classifications were marked up (see Page 108) but up to late last week no move had been made on spring steel or flat wire.

**See Improvement**—August is expected to see an improvement in shipments and orders; further gains are indicated for September.

Hot-rolled sheet orders are coming in at a better rate, but one important midwestern mill can still book some tonnage for August shipment. Galvanized sheets are moving in surprising volume with pro-



duction not far below capacity. Automakers are still buying cold-rolled sheets for fall delivery, apparently watching leadtime to be sure of delivery.

Describing sales as "lousy," a Pittsburgh mill looks for gradual improvement in August and September. Automotive orders are trickling in, but they've not been up to expectations.

**Prices No Deterrent**—"We don't think higher prices will have any effect on demand," said a Pittsburgh sales executive. "Almost all our customers expected they'd have to pay more for steel before long. They won't begrudge us a moderate increase in view of the industry's poor first half earnings."

Sales to the appliance industry are improving due to new home construction. Automotive orders are up, but uncertainty about an auto labor settlement has apparently caused some companies to postpone buying to October.

Reflecting the relatively easy supply conditions, Inland Steel Co. quotes this delivery schedule: Hot-rolled sheets and strip, two to three weeks; cold-rolled sheets and strip, September; enameling iron sheets and electrical sheets, early to mid-September; electrolytic tin plate, black plate, and blue plate, August; galvanized sheets, October.

The schedule shows several changes since a week ago: Slight extensions in cold-rolled sheets and strip, enameling sheets, electrical sheets and galvanized sheets.

Hunterspoint Steel Co., Long Island City, N. Y., booked 2070 tons of uncoated corrugated carbon sheets, No. 28 gage, Corps of Engineers, San Francisco (two contracts; total \$384,168).

## Plates . . .

Plate Prices, Page 107

The \$4 a ton increase in carbon plates (to \$5.30 per 100 lb) initiated last week by Bethlehem Steel Corp. is not expected to have much influence on buying. Demand hasn't been particularly robust for some time, and expectations are that buying will continue to be in the hand-to-mouth category.

Some tightening in deliveries are likely this fall, but, at present, tonnage is readily available, especially light gage material. Indicative of

supply, Inland Steel Co. deliveries on universal mill plates extend one to two weeks; on safety plates, 76 and 100 in. mill plates, two to three weeks.

As business picks up and deliveries tend to become more extended, steel buyers are likely to pay more attention to their inventories. It may mean more forward buying in the fall.

Plate fabricators in the Pacific Northwest report they are in receipt of little inquiry. Small district shops are practically out of backlogs.

## Structural Shapes . . .

Structural Shape Prices, Page 107

Structural steel demand is moderately active, with shapes in easy supply and most fabricators fairly well booked into the fall.

Bridges and schools account for the bulk of fabricated structural steel contracts. Most shops are competitive pricewise with their backlogs lower.

Higher cost plain material, up \$4.50 a ton, effective Aug. 6, still gets slight consideration in estimates for fabricating contracts. Bethlehem Steel Co. led the structural advance.

In New England, additional tonnage for the Worcester Expressway is expected to come out this month—6000 tons have been placed. District shops are estimating close to 12,000 tons for transmission towers.

Industrial construction is reported in a sharp upswing at Los Angeles, with fabricators bidding actively on new work. Competition is keen. Public work is also increasing.

Structural awards in the Pacific Northwest last week exceeded 1000 tons. Not much in the way of important tonnage is pending in the area, but sellers' backlogs are fair. Even small jobs, which have been reasonably numerous, have slowed down.

## Tool Steel . . .

Tool Steel Prices, Page 111

Last week, Crucible Steel Co. of America, Pittsburgh, announced an upward revision in tool steel prices, effective Aug 6: 4.50 cents per pound on high speed steels; 3 cents per pound on alloy tool steel (40 cents per pound base and higher); 2.5 cents per pound on low alloy

and water hardening tool steels (under 40 cents per pound base).

The first major change in 15 years in the method of pricing Kennametal tungsten carbide products becomes effective Sept. 2. The change, in most instances, reduces prices on large quantities and on large pieces, and increases prices on small quantities.

The new pricing system adopted by Kennametal Inc., Latrobe, Pa., follows steel industry practice. Base prices, plus uniform quantity extras, will be used for many standard items. The quantity extra on all stocked items will prorate handling costs over the quantity ordered. Base price of nonstocked items of tools and blanks will be 10 per cent higher than on stocked items, and the prorated quantity extra will cover special manufacturing setup and order handling costs.

On blanket orders specifying partial shipments over a period of time, the quantity extra for the quantity released is applied.

Shipments of high speed and tool steel, (excluding hollow drill steel) totaled 5048 net tons in June, reports the American Iron & Steel Institute. This was off slightly from the 5560 tons moved during May, and was down sharply from the 7989 tons shipped in June, 1957.

In the first six months of this year, shipments amounted to 34,243 net tons, vs. 56,083 in the corresponding period last year.

## Distributors . . .

Prices, Page 112

Expectations are that steel distributors will raise their prices to at least cover advances on the mill level. Order bookings have improved the last couple weeks, and it is thought volume business will hold up enough to support any price hikes at this time.

Midwestern service centers were pleasantly surprised by July order volume. While it was below that in June, the total was much better than had been expected.

The normal warehouse inventory runs about 120 days, and most market observers think it is over that level now. The distributors probably won't do much toward bolstering their stocks over the near term.

On the whole, August business  
(Please turn to Page 103)



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(Concluded from Page 99)

is expected to be better than July's. June volume was the best so far this year. One eastern seller says July business was off about 5 per cent from June's. A 10 per cent drop was expected.

Many service centers do a reinforcing bar fabricating business. It's running well ahead of general warehouse activities in the Midwest. Part of the volume is in cleaning up a backup of orders caused by wet weather during June.

## Tubular Goods . . .

Tubular Goods Prices, Page 111

By the end of last week, virtually all the leading producers of tubular goods increased prices on standard pipe, line pipe, and oil country casing. The increases, averaging about 3 per cent and ranging \$6 to \$8 a ton, were initiated by Republic Steel Corp., Cleveland, Aug. 4.

Higher drilling rates in the Southwest are brightening the market outlook for oil country goods. August shipments will be better than June's, which month's tonnage was noticeably increased by price hedging.

U. S. Steel Corp.'s National Tube Div., Pittsburgh, recently booked an order from the Natural Gas Pipe-

line Co. of America for 85,500 tons of 36-in. electricweld pipe for a 490-mile pipeline from Oklahoma to the Chicago area. Because of an upturn in seamless pipe orders, National Tube has blown in its No. 3 blast furnace at McKeesport, Pa. It has been idle since Sept. 23, 1957.

A Texas pipe mill has booked an order which will keep its plant running at capacity until October. By then, a ruling by the Supreme Court on the Memphis decision may be forthcoming. Overturning of the Memphis ruling would release a flood of delayed pipe contracts.

Peoples Gas Light & Coke Co. has canceled a \$76-million pipeline construction project for its subsidiary, Natural Gas Pipeline Co. of America. The contract with Colorado Interstate Gas Co. to supply gas for the project was canceled by mutual consent.

The Steel Co. of Canada Ltd. has announced plans for the construction of a \$10-million pipe plant near Montreal. The mill is scheduled to go into production during the summer of 1959.

A fairly large volume of warehouse sales of cast iron pipe is reported in the Pacific Northwest. In-

quiries for large lots are lacking, but a pickup in demand is expected in about 30 days.

## Stainless Steel . . .

Stainless Steel Prices, Page 111

Production of stainless and heat resisting steel ingots totaled 200,048 net tons in the second quarter of this year, reports the American Iron & Steel Institute. Output in the first quarter was 167,821 tons; in the second quarter, 1957, it was 249,470 tons.

In the first six months of this year, production amounted to 379,179 net tons, vs. 572,473 in the same period last year.

## Rankin Works To Close

Consolidation of the Rankin Works and the Donora Steel & Wire Works, American Steel & Wire Div., U. S. Steel Corp., Pittsburgh, on Nov. 1 is planned. The 72-year-old Rankin Works, Rankin, Pa., will be closed about that date, and the operation moved to Donora, Pa. Reason: Obsolescence of equipment

## Iron Ore Statistics—June, 1958

Stocks at	(Gross tons)				Foreign Ores	Totals
	U. S. Ores		Canadian			
	L. Superior	Other	L. Superior	Other		
U. S. Furnaces:						
Eastern	3,844,422	203,826	151,776	1,591,159	3,948,809	9,739,992
Pitts.-Youngstown	8,572,033	46,885	478,891	1,911,291	3,516,585	14,525,685
Cleve.-Detroit	8,261,597	138,736	129,868	259,038	379,590	9,168,829
Chicago	9,551,547	(a)	(a)		(a)	9,551,547
Southern	(a)	2,328,913		(a)	1,587,385	3,916,298
Western		764,189				764,189
Total	30,229,599	3,482,549	760,535	3,761,488	9,432,369	47,666,540
At U. S. Docks:						
Lake Erie	3,505,893		103,529	983,644		4,593,066
Other				(a)	(a)	(a)
Total	3,505,893		103,529	983,644		4,593,066
Total U. S. Stocks	33,735,492	3,482,549	864,064	4,745,132	9,432,369	52,259,606
Total Canadian	1,255,973		31,031	456,668	103,141	1,846,813
Total U. S. & Canada	34,991,465	3,482,549	895,095	5,201,800	9,535,510	54,106,419

### CONSUMPTION OF IRON ORE—JUNE, 1958

	(Gross tons)				Foreign Ores	Totals
	U. S. Ores		Canadian			
	L. Superior	Other	L. Superior	Other		
In U. S. Districts						
Eastern	387,638	108,619	59,685	228,370	665,050	1,449,362
Pitts.-Youngstown	1,223,920	123,745	35,180	293,614	354,935	2,031,394
Cleve.-Detroit	690,530	17,485	61,283	45,762	49,753	864,813
Chicago	1,264,755	(a)	(a)		(a)	1,264,755
Southern	(a)	452,844		(a)	140,937	593,781
Western		469,922				469,922
In U. S.						
Blast furnaces	3,009,234	917,000	135,773	298,967	485,369	4,846,343
Steel furnaces	121,460	51,717	7,592	19,709	316,404	516,882
Sintering (1)	436,142	203,872	12,783	249,070	408,902	1,310,769
Miscellaneous (2)	7	26				33
Total U. S.	3,566,843	1,172,615	156,148	567,746	1,210,975	6,674,027
In Canada						
Blast furnaces	206,640		55,742	63,560		325,942
Steel furnaces	7,257			10,017	14,839	32,113
Sintering (1)	55,091		144	19,103		74,338
Miscellaneous (2)	60					60
Total Canada	269,048		55,886	92,680	14,839	432,453
Total U. S.-Canada	3,835,891	1,172,615	212,034	660,426	1,225,514	7,106,480

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at Rankin, and the need for increased operational efficiency to meet competitive conditions.

Production at Rankin has fallen steadily for a number of years. The plant reached its peak in 1924, when shipments totaled 138,000 tons. As recently as 1956 it shipped 61,000 tons, but in 1957 the total dropped to 37,000 tons.

The Rankin Works was established in 1886 as a common products mill. It was acquired by U. S. Steel in 1902 for the production of steel strapping wire, merchant wire, nails, staples, barbed wire, woven fence, wire hoops.

## Steel Shipments Increase

Finished steel shipments in June were more than 1 million net tons over May's, reports the American Iron & Steel Institute. Shipments to each of three leading markets—warehouses, automotive, and construction (including maintenance)—were up more than 200,000 tons.

The June total was 5,746,217 net tons, vs. 4,649,499 in May and 7,284,616 in June last year.

During the first six months, the mills shipped 28,699,218 net tons of finished products, vs. 44,285,435 in the first half of 1957.

Shipments to leading markets during the first half included: Warehouses, 5,097,936 tons, 18.6 per cent of total domestic shipments; construction, including maintenance, 4,477,302 tons, 16.3 per cent; automotive, 4,099,258 tons, 15 per cent; containers, 3,351,714 tons, 12.2 per cent.

Leading product shipments in the first half included: Cold-rolled sheets, 4,427,048 net tons; hot-rolled sheets, 2,761,328 tons; electrolytic tin plate, 2,599,582; plates, 2,749,813; hot-rolled bars and light shapes, 2,586,659; heavy structural shapes, 2,043,520; line pipe, 1,411,590; galvanized sheets, 1,266,441; drawn wire, 1,153,139 tons.

## STRUCTURAL SHAPES . . .

### STRUCTURAL STEEL PLACED

10,000 tons, 38-story office building for Samuel Rudin, 80 Pine St., New York, to Harris Structural Steel Co., New York.

4300 tons, state highway structures, Elmsford section, Cross Westchester Expressway, New York, to Ernst Iron Works, Buffalo; Mt. Vernon Contracting Co., Mt. Vernon, N. Y., general contractor.

950 tons, barracks and mess hall, Ft. Devens, Mass., to Bethlehem Steel Co., Bethlehem, Pa.; Wexler Construction Co., Newton Highlands, Mass., general contractor.

750 tons, seven grade separation structures, Erie Thruway, Greene-Summit-Miller Creek Townships, Pa., to Jones & Laughlin Steel Corp., Pittsburgh; Allegheny Contracting Industries Inc., Pittsburgh, general contractor.

685 tons, U. S. post office and courthouse, Burlington, Vt., to Vermont Structural Steel Corp., Burlington; Franchi Construction Co. Inc., West Newton, Mass., general contractor; fabricated structural steel to same shop.

600 tons, high school, St. Joseph, Mich., to Mississippi Valley Structural Steel Co.; Pearson Construction Co., Benton Harbor, Mich., general contractor.

515 tons, central heating plant, Ft. George G. Meade, Maryland, to Ceco Steel Products Corp., New York; Irons & Reynolds Inc., Washington, general contractor; 1215 tons, fabricated structural steel to be awarded.

500 tons, office building, Chesapeake & Potomac Telephone Co., Charleston, W. Va., to West Virginia Steel Corp., Charleston; Consolidated Engineering Co., Baltimore, general contractor.

465 tons, Forest Grove School, Worcester, Mass., to Groisser & Schlager Iron Works, Somerville, Mass.; Vara Construction Co. Inc., Boston, general contractor; 35 tons, concrete reinforcing bars, Northern Steel Inc., Boston.

450 tons, high school, Naugatuck, Conn., to Connecticut Steel Co., New Haven, Conn. (structurals), and Fox Steel Co., Orange, Conn. (reinforcing bars); Fusco-Amatruda Co., New Haven, Conn., general contractor.

445 tons, two I-beam bridges, interstate project, F.A.P. 95, Bangor, Maine, to Bancroft

& Martin Rolling Mills Co., South Portland, Maine; Seaboard Engineering Co. Inc., Portland, Maine, general contractor.

400 tons, junior high school, New Britain, Conn., to City Iron Works, Hartford, Conn. (structurals), and Scherer Steel Co., Hartford (reinforcing bars); Hayes Construction Co., New Britain, general contractor.

400 tons, dairy, Portland, Oreg., reported placed with Louis Raffle Co., Portland; general contract to Paul B. Emerick Co., Portland, at \$1,366,000.

350 tons, Oregon bridge, Josephine County, reported to Gunderson Bros. Engineering Co., Portland, Oreg.

350 tons, liberal arts building, University of Massachusetts, Amherst, Mass., to Mohawk Steel Co., Albany, N. Y.; White Construction Co., Boston, general contractor.

325 tons, angles, Corps of Engineers, San Francisco, to Oregon Steel Mills, division of Gilmore Steel & Supply Co. Inc., Portland, Oreg.

290 tons, graduate center building, Northeastern University, Boston, to Bethlehem Steel Co., Bethlehem, Pa.; John A. Volpe Construction Co., Malden, Mass., general contractor.

285 tons, high school, St. Joseph, Mich., to Truscon Steel Div., Republic Steel Corp., Chicago; Pearson Construction Co., Benton Harbor, Mich., general contractor.

220 tons, also 140 tons of reinforcing, Washington State highway bridge, Whatcom County, reported to Poole, McGonigle & Dick, Portland, Oreg.; general contract to Wilder Construction Co., Portland, low at \$535,322.

200 tons, science building, Swarthmore College, Swarthmore, Pa., to U. S. Steel Supply Div. U. S. Steel Corp., Philadelphia; Turner Construction Co., general contractor.

200 tons, grade separation structures, Erie Thruway, Greene-Summit-Miller Creek Townships, Pa., to Levinson Steel Co., Pittsburgh; Allegheny Contracting Industries Inc., Pittsburgh, general contractor.

170 tons, barracks and mess hall, Ft. Devens, Mass., to Groisser & Schlager Iron Works, Somerville, Mass.; Wexler Construction Co. Inc., Newton Highlands, Maine, general contractor.

150 tons, state highway structures, Erie-Niagara Counties, New York, to Central Steel Construction Co., New York; Sheridan Construction Corp., Buffalo, general contractor; 40 tons, reinforcing bars, Bethlehem Steel Co., Bethlehem, Pa.

150 tons, two I-beam bridges, Bangor, Maine, to Bancroft & Martin Rolling Mills Co., South Portland, Maine; Seaboard Engineering Corp., Portland, Maine, general contractor.

140 tons, high school, Hanover, Mass., to Groisser & Schlager Iron Works, Somerville, Mass.; Tornabene Bros. Co., Newton Lower Falls, Mass., general contractor; 120 tons, bar joists and 60 tons, concrete reinforcing bars, to Bethlehem Steel Co., Bethlehem, Pa.

(Please turn to Page 115)

## DISTRICT INGOT RATES

(Percentage of Capacity Engaged)

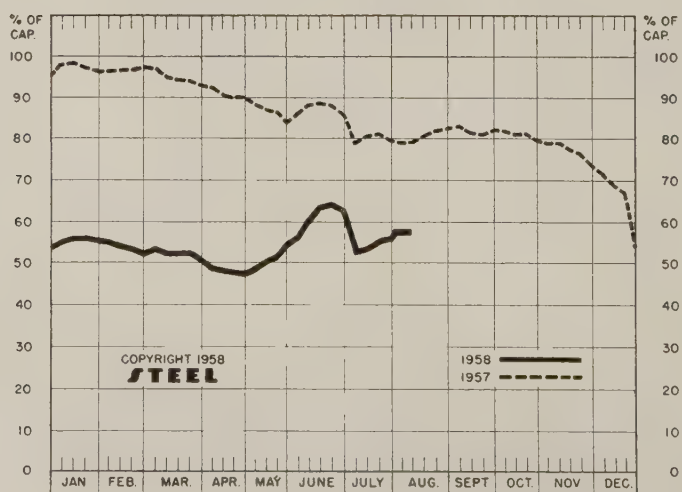
	Week Ended		Same	Week
	Aug. 10	Change	1957	1956
Pittsburgh .....	51.5	+ 1.5*	82.0	53.0
Chicago .....	67	+ 2*	85.5	57.0
Eastern .....	60	+ 2*	86.0	78.0
Youngstown .....	52	0*	81.0	50.0
Wheeling .....	73.5	0	87.0	73.0
Cleveland .....	53.5	- 0.5	87.0	60.5
Buffalo .....	51.5	+ 1.5	88.0	55.0
Birmingham .....	54.5	+ 2.5	85.5	15.0
Cincinnati .....	44.5	+ 3.5*	73.0	77.0
St. Louis .....	83	- 7	85.5	96.0
Detroit .....	68	+ 1*	54.0	43.0
Western .....	68	+ 1*	98.0	30.0
National Rate ..	59	0	79.0	52.5

## INGOT PRODUCTION†

	Week Ended	Week	Month	Year
	Aug. 10	Ago	Ago	Ago
INDEX .....	100.3†	97.2	89.8	127.2
(1947-49=100)				
NET TONS ...	1,611†	1,561	1,442	2,043
(In thousands)				

\*Change from preceding week's revised rate.  
†Estimated. ‡American Iron & Steel Institute.  
Weekly capacity (net tons): 2,699,173 in 1958; 2,559,490 in 1957; 2,461,893 in 1956.

## NATIONAL STEELWORKS OPERATIONS

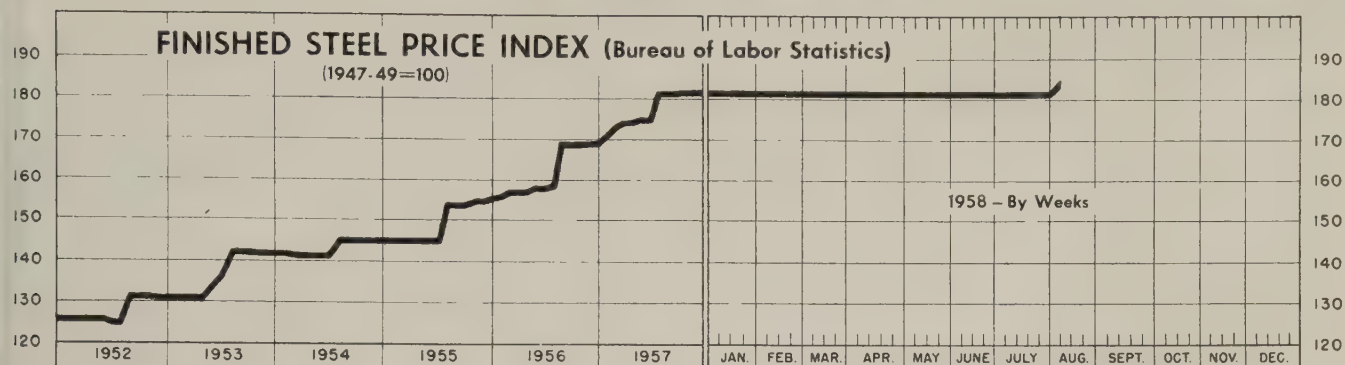




# Price Indexes and Composites

## FINISHED STEEL PRICE INDEX (Bureau of Labor Statistics)

(1947-49=100)



Aug. 5, 1958

Week Ago

Month Ago

July Avg

Year Ago

185.0†

181.5

181.5

181.5

181.5

†Preliminary

## AVERAGE PRICES OF STEEL (Bureau of Labor Statistics)

Week Ended Aug. 5

Prices include mill base prices and typical extras and deductions. Units are 100 lb except where otherwise noted in parentheses. For complete description of the following products and extras and deductions applicable to them, write to STEEL.

Rails, Standard No. 1 ....	\$5.600	Bars, Reinforcing .....	6.285
Rails, Light, 40 lb .....	7.067	Bars, C.F., Carbon .....	10.570
Tie Plates .....	6.600	Bars, C.F., Alloy .....	14.000
Axles, Railway .....	9.825	Bars, C.F., Stainless, 302 (lb) .....	0.553
Wheels, Freight Car, 33 in. (per wheel) .....	60.000	Sheets, H.R., Carbon ....	6.350
Plates, Carbon .....	6.150	Sheets, C.R., Carbon ....	7.300
Structural Shapes .....	5.942	Sheets, Galvanized .....	8.545
Bars, Tool Steel, Carbon (lb) .....	0.535	Sheets, C.R., Stainless, 302 (lb) .....	0.688
Bars, Tool Steel, Alloy, Oil Hardening Die (lb) ....	0.650	Sheets, Electrical .....	12.625
Bars, Tool Steel, H.R., Alloy, High Speed, W 6.75, Cr 4.5, V 2.1, Mo 5.5, C 0.60 (lb) .....	1.355	Strip, C.R., Carbon ....	9.481
Bars, Tool Steel, H.R., Alloy, High Speed, W18, Cr 4, V 1 (lb) .....	1.850	Strip, C.R., Stainless, 430 (lb) .....	0.493
Bars, H.R., Alloy .....	10.713	Strip, H.R., Carbon ....	6.250
Bars, H.R., Stainless, 303 (lb) .....	0.525	Pipe, Black, Butt-weld (100 ft) .....	20.502
Bars, H.R., Carbon .....	6.675	Pipe, Galv., Butt-weld (100 ft) .....	23.952
		Pipe, Line (100 ft) .....	205.710
		Casing, Oil Well, Carbon (100 ft) .....	201.080
		Casing, Oil Well, Alloy (100 ft) .....	313.163

Tubes, Boiler (100 ft) ...	49.130	Black Plate, Canmaking Quality (95 lb base box) ..	7.583
Tubing, Mechanical, Carbon (100 ft) .....	24.953	Wire, Drawn, Carbon ...	10.575
Tubing, Mechanical, Stainless, 304 (100 ft) .....	205.608	Wire, Drawn, Stainless, 430 (lb) .....	0.653
Tin Plate, Hot-dipped, 1.25 lb (95 lb base box) ....	9.783	Bale Ties (bundles) .....	7.967
Tin Plate, Electrolytic, 0.25 lb (95 lb base box) ..	8.483	Nails, Wire, 8d Common. ..	9.828
		Wire, Barbed (80-rod spool) ..	8.719
		Woven Wire Fence (20-rod roll) .....	21.737

## STEEL'S FINISHED STEEL PRICE INDEX\*

	Aug. 6 1958	Week Ago	Month Ago	Year Ago	5 Yr Ago
Index (1935-39 avg=100) ..	245.03†	239.15	239.15	239.15	189.38
Index in cents per lb .....	6.638†	6.479	6.479	6.479	5.130

## STEEL'S ARITHMETICAL PRICE COMPOSITES\*

Finished Steel, NT .....	\$148.74†	\$145.42	\$145.42	\$146.19	\$115.56
No. 2 Fdry Pig Iron, GT..	66.49	66.49	66.49	66.49	56.54
Basic Pig Iron, GT .....	65.99	65.99	65.99	65.99	56.04
Malleable Pig Iron, GT ..	67.27	67.27	67.27	67.27	57.27
Steelmaking Scrap, GT ...	42.00	40.00	35.67	53.83	44.08

\*For explanation of weighted index see STEEL, Sept. 19, 1949, p. 54; of arithmetical price composite, STEEL, Sept. 1, 1952, p. 130. †Preliminary.

## Comparison of Prices

Comparative prices by districts, in cents per pound except as otherwise noted. Delivered prices based on nearest production point.

### FINISHED STEEL

	Aug. 6 1958	Week Ago	Month Ago	Year Ago	5 Yr Ago
Bars, H.R., Pittsburgh ....	5.675	5.425	5.425	5.425	4.15
Bars, H.R., Chicago .....	5.675	5.425	5.425	5.425	4.15
Bars, H.R., deld. Philadelphia ..	5.975	5.725	5.725	5.715	5.302
Bars, C.F., Pittsburgh .....	7.65*	7.30*	7.30*	7.30*	5.20
Shapes, Std., Pittsburgh ...	5.275	5.275	5.275	5.275	4.10
Shapes, Std., Chicago .....	5.275	5.275	5.275	5.275	4.10
Shapes, deld., Philadelphia ..	5.77	5.545	5.545	5.585	4.38
Plates, Pittsburgh .....	5.10	5.10	5.10	5.10	4.10
Plates, Chicago .....	5.10	5.10	5.10	5.10	4.10
Plates, Coatesville, Pa. ....	5.30	5.10	5.10	5.50	4.35
Plates, Sparrows Point, Md. ....	5.30	5.10	5.10	5.10	4.10
Plates, Claymont, Del. ....	5.30	5.10	5.10	5.70	4.55
Sheets, H.R., Pittsburgh ...	5.10	4.925	4.925	4.925	3.925
Sheets, H.R., Chicago .....	5.10	4.925	4.925	4.925	3.925
Sheets, C.R., Pittsburgh .....	6.275	6.05	6.05	6.05	4.775
Sheets, C.R., Chicago .....	6.275	6.05	6.05	6.05	4.775
Sheets, C.R., Detroit .....	6.275	6.05	6.05	6.05-6.15	4.975
Sheets, Galv., Pittsburgh ...	6.875	6.60	6.60	6.60	5.275
Strip, H.R., Pittsburgh .....	5.10	4.925	4.925	3.975-4.425	
Strip, H.R., Chicago .....	5.10	4.925	4.925	3.925	
Strip, C.R., Pittsburgh .....	7.425	7.15	7.15	7.15 5.45-5.95	
Strip, C.R., Chicago .....	7.425	7.15	7.15	7.15	5.70
Strip, C.R., Detroit .....	7.425	7.15	7.15	7.25 5.45-6.05	
Wire, Basic, Pittsburgh ...	8.00	7.65	7.65	7.65 5.475-5.525	
Nails, Wire, Pittsburgh ....	8.95	8.95	8.95	8.95 6.35-6.55	
Tin plate (1.50 lb) box, Pitts. ..	\$10.30	\$10.30	\$10.30	\$10.30	\$8.95

\*Including 0.35c for special quality.

### SEMIFINISHED STEEL

Billets, forging, Pitts. (NT) ..	\$99.50	\$96.00	\$96.00	\$96.00	\$75.50
Wire rods $\frac{3}{8}$ -" Pitts. ....	6.40	6.15	6.15	6.15	4.525

	Aug. 6 1958	Week Ago	Month Ago	Year Ago	5 Yr Ago
<b>PIG IRON, Gross Ton</b>					
Bessemer, Pitts. ....	\$67.00	\$67.00	\$67.00	\$67.00	\$57.00
Basic, Valley .....	66.00	66.00	66.00	66.00	56.00
Basic, deld., Phila. ....	70.41	70.41	70.41	69.88	60.75
No. 2 Fdry, Neville Island, Pa. ..	66.50	66.50	66.50	66.50	56.50
No. 2 Fdry, Chicago .....	66.50	66.50	66.50	66.50	56.50
No. 2 Fdry, deld., Phila. ..	70.91	70.91	70.91	70.38	61.25
No. 2 Fdry, Birm. ....	62.50	62.50	62.50	62.50	52.88
No. 2 Fdry (Birm.) deld. Cin ..	70.20	70.20	70.20	70.20	60.43
Malleable, Valley .....	66.50	66.50	66.50	66.50	56.50
Malleable, Chicago .....	66.50	66.50	66.50	66.50	56.50
Ferromanganese, net ton ..	245.00†	245.00†	245.00†	255.00†	200.00*

†74-76% Mn, Duquesne, Pa. \*Etna, Pa.

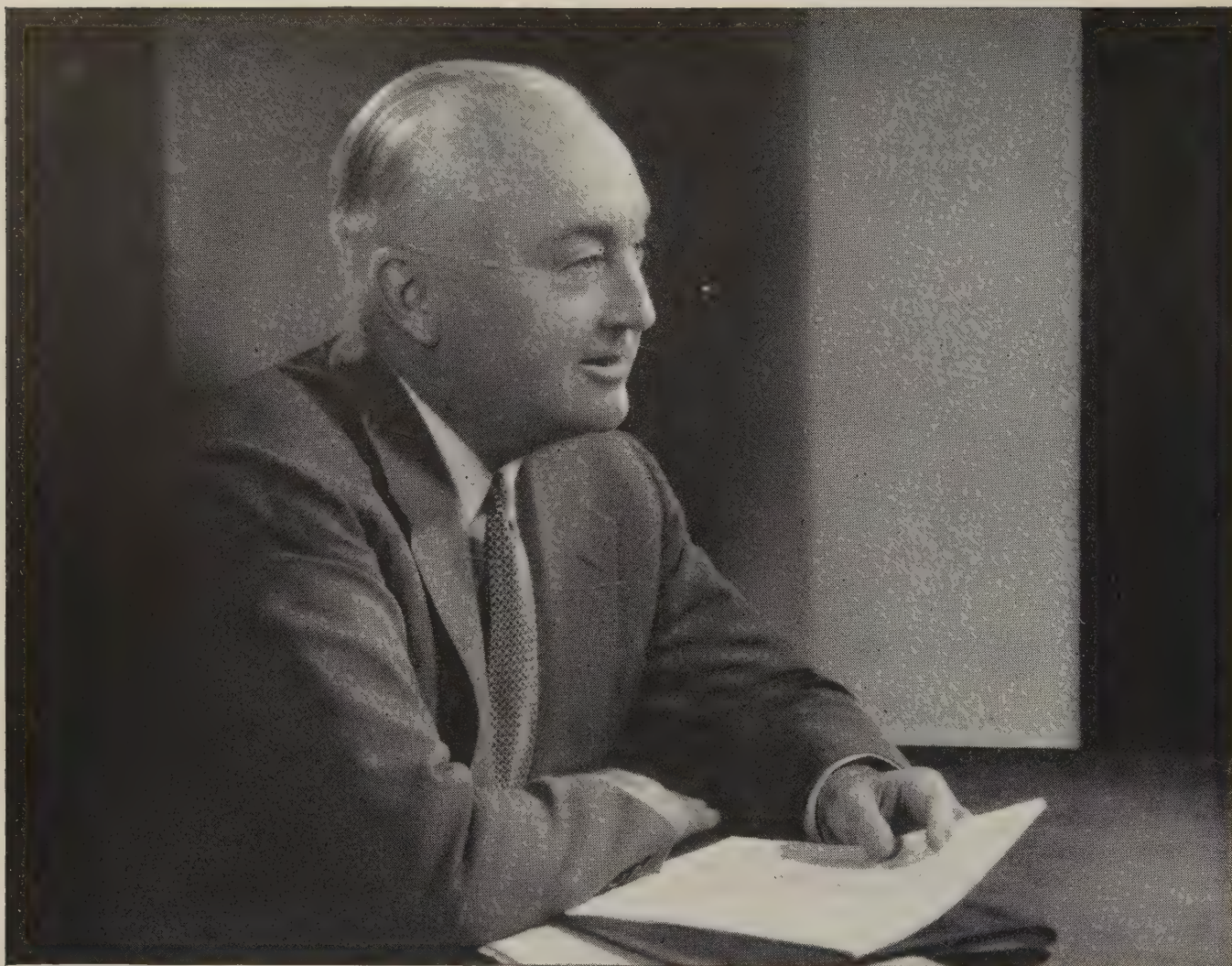
### SCRAP, Gross Ton (Including broker's commission)

No. 1 Heavy Melt, Pittsburgh ..	\$44.50	\$41.50	\$35.50	\$55.50	\$44.50
No. 1 Heavy Melt, E. Pa. ..	38.00	36.00	34.00	52.00	44.25
No. 1 Heavy Melt, Chicago. ....	43.50	42.50	38.00	54.00	43.50
No. 1 Heavy Melt, Valley ..	43.50	43.50	38.50	55.50	45.50
No. 1 Heavy Melt, Cleve. ..	40.00	38.50	35.00	52.50	45.50
No. 1 Heavy Melt, Buffalo..	34.50	27.50	27.50	46.50	43.75
Rails, Re-rolling, Chicago ..	64.50	61.50	55.50	79.50	56.00
No. 1 Cast, Chicago .....	45.50	44.50	41.50	47.50	42.00

### COKE, Net Ton

Beehive, Furn., Connlsvl. ..	\$15.25	\$15.25	\$15.25	\$15.25	\$14.75
Beehive, Fdry., Connlsvl. ..	18.25	18.25	18.25	18.25	16.75





ROY T. HURLEY

Portrait by Bachrach

## "More than 11,000 of our 19,000 employees are now buying U.S. Savings Bonds Regularly"

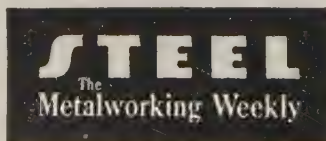
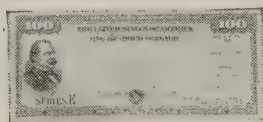
"We are delighted to see the steady increase in the number of our people who are buying U.S. Savings Bonds through the payroll plan. More than 59% of our employees are now enrolled.

"To enjoy the benefits of peace and freedom, we must provide for our own personal financial security and, at the same time, create the power for peace through support of an adequate defense program. Systematic savings through the Savings Bond program will keep us ahead of any potential aggressor and help insure the soundness of an economic system which encourages and

permits each of us to look forward to a bright, secure future."

**ROY T. HURLEY, Chairman and President,  
Curtiss-Wright Corporation**

Today there are more Payroll savers than ever before in peacetime. If employee participation in *your* Payroll Savings Plan is less than 50% . . . or if *your* employees now do not have the opportunity to build for their future through the systematic purchase of U.S. Savings Bonds, give your State Director an opportunity to help. Look him up in your phone book. Or write: Savings Bonds Division, U.S. Treasury Dept., Washington, D. C.



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# Steel Prices

Mill prices as reported to STEEL, Aug. 6, cents per pound except as otherwise noted. Changes shown in italics. Code number following mill points indicates producing company. Key to producers, page 108; footnotes, page 110.

## SEMI-FINISHED

<b>INGOTS, Carbon, Forging (NT)</b>	
Munhall, Pa. U5	\$73.50
<b>INGOTS, Alloy (NT)</b>	
Detroit S41	\$77.00
Farrell, Pa. S3	77.00
Lowellville, O. S3	77.00
Midland, Pa. C18	77.00
Munhall, Pa. U5	82.00
Sharon, Pa. S3	77.00

## BILLETS, BLOOMS & SLABS

<b>Carbon, Re-rolling (NT)</b>	
Bessemer, Pa. U5	\$80.00
Buffalo R2	80.00
Clairton, Pa. U5	80.00
Ensley, Ala. T2	80.00
Fairfield, Ala. T2	80.00
Fontana, Calif. K1	88.00
Gary, Ind. U5	80.00
Johnstown, Pa. B3	80.00
Lackawanna, N.Y. B2	80.00
Munhall, Pa. U5	80.00
Owensboro, Ky. G8	77.50
S. Chicago, Ill. R2, U5	80.00
S. Duquesne, Pa. U5	80.00
Sterling, Ill. N15	77.50
Youngstown R2	80.00
<b>Carbon, Forging (NT)</b>	
Bessemer, Pa. N5	\$99.50
Buffalo R2	99.50
Canton, O. R2	102.00
Clairton, Pa. U5	99.50
Conshohocken, Pa. A3	101.00
Ensley, Ala. T2	99.50
Fairfield, Ala. T2	99.50
Fontana, Calif. K1	105.50
Gary, Ind. U5	99.50
Geneva, Utah C11	99.50
Houston S5	104.50
Johnstown, Pa. B2	99.50
Lackawanna, N.Y. B2	99.50
Los Angeles B3	105.50
Midland, Pa. C18	96.00
Munhall, Pa. U5	99.50
Owensboro, Ky. C8	96.00
Seattle B3	109.50
Sharon, Pa. S3	96.00
S. Chicago R2, U5, W14	99.50
S. Duquesne, Pa. U5	99.50
S. San Francisco B3	105.50
Warren, O. C17	99.50
<b>Alloy, Forging (NT)</b>	
Bethlehem, Pa. R2	\$119.00
Bridgeport, Conn. C32	114.00
Buffalo R2	119.00
Canton, O. R2, T7	119.00
Conshohocken, Pa. A3	121.00
Detroit S41	114.00
Economy, Pa. B14	114.00
Farrell, Pa. S3	114.00
Fontana, Calif. K1	135.00
Gary, Ind. U5	119.00
Houston S5	124.00
Ind. Harbor, Ind. Y1	119.00
Johnstown, Pa. B2	119.00
Lackawanna, N.Y. B2	119.00
Los Angeles B3	134.00
Lowellville, O. S3	114.00
Massillon, O. R2	119.00
Midland, Pa. C18	114.00
Munhall, Pa. U5	119.00
Owensboro, Ky. G8	114.00
Sharon, Pa. S3	114.00
S. Chicago R2, U5, W14	119.00
S. Duquesne, Pa. U5	119.00
Sterling, O. Y1	119.00
Warren, O. C17	119.00

<b>Carbon, Forging (NT)</b>	
Bessemer, Pa. N5	\$99.50
Buffalo R2	99.50
Canton, O. R2	102.00
Clairton, Pa. U5	99.50
Conshohocken, Pa. A3	101.00
Ensley, Ala. T2	99.50
Fairfield, Ala. T2	99.50
Fontana, Calif. K1	105.50
Gary, Ind. U5	99.50
Geneva, Utah C11	99.50
Houston S5	104.50
Johnstown, Pa. B2	99.50
Lackawanna, N.Y. B2	99.50
Los Angeles B3	105.50
Midland, Pa. C18	96.00
Munhall, Pa. U5	99.50
Owensboro, Ky. C8	96.00
Seattle B3	109.50
Sharon, Pa. S3	96.00
S. Chicago R2, U5, W14	99.50
S. Duquesne, Pa. U5	99.50
S. San Francisco B3	105.50
Warren, O. C17	99.50
<b>Alloy, Forging (NT)</b>	
Bethlehem, Pa. R2	\$119.00
Bridgeport, Conn. C32	114.00
Buffalo R2	119.00
Canton, O. R2, T7	119.00
Conshohocken, Pa. A3	121.00
Detroit S41	114.00
Economy, Pa. B14	114.00
Farrell, Pa. S3	114.00
Fontana, Calif. K1	135.00
Gary, Ind. U5	119.00
Houston S5	124.00
Ind. Harbor, Ind. Y1	119.00
Johnstown, Pa. B2	119.00
Lackawanna, N.Y. B2	119.00
Los Angeles B3	134.00
Lowellville, O. S3	114.00
Massillon, O. R2	119.00
Midland, Pa. C18	114.00
Munhall, Pa. U5	119.00
Owensboro, Ky. G8	114.00
Sharon, Pa. S3	114.00
S. Chicago R2, U5, W14	119.00
S. Duquesne, Pa. U5	119.00
Sterling, O. Y1	119.00
Warren, O. C17	119.00

<b>Carbon, Forging (NT)</b>	
Bessemer, Pa. N5	\$99.50
Buffalo R2	99.50
Canton, O. R2	102.00
Clairton, Pa. U5	99.50
Conshohocken, Pa. A3	101.00
Ensley, Ala. T2	99.50
Fairfield, Ala. T2	99.50
Fontana, Calif. K1	105.50
Gary, Ind. U5	99.50
Geneva, Utah C11	99.50
Houston S5	104.50
Johnstown, Pa. B2	99.50
Lackawanna, N.Y. B2	99.50
Los Angeles B3	105.50
Midland, Pa. C18	96.00
Munhall, Pa. U5	99.50
Owensboro, Ky. C8	96.00
Seattle B3	109.50
Sharon, Pa. S3	96.00
S. Chicago R2, U5, W14	99.50
S. Duquesne, Pa. U5	99.50
S. San Francisco B3	105.50
Warren, O. C17	99.50
<b>Alloy, Forging (NT)</b>	
Bethlehem, Pa. R2	\$119.00
Bridgeport, Conn. C32	114.00
Buffalo R2	119.00
Canton, O. R2, T7	119.00
Conshohocken, Pa. A3	121.00
Detroit S41	114.00
Economy, Pa. B14	114.00
Farrell, Pa. S3	114.00
Fontana, Calif. K1	135.00
Gary, Ind. U5	119.00
Houston S5	124.00
Ind. Harbor, Ind. Y1	119.00
Johnstown, Pa. B2	119.00
Lackawanna, N.Y. B2	119.00
Los Angeles B3	134.00
Lowellville, O. S3	114.00
Massillon, O. R2	119.00
Midland, Pa. C18	114.00
Munhall, Pa. U5	119.00
Owensboro, Ky. G8	114.00
Sharon, Pa. S3	114.00
S. Chicago R2, U5, W14	119.00
S. Duquesne, Pa. U5	119.00
Sterling, O. Y1	119.00
Warren, O. C17	119.00

<b>Carbon, Forging (NT)</b>	
Bessemer, Pa. N5	\$99.50
Buffalo R2	99.50
Canton, O. R2	102.00
Clairton, Pa. U5	99.50
Conshohocken, Pa. A3	101.00
Ensley, Ala. T2	99.50
Fairfield, Ala. T2	99.50
Fontana, Calif. K1	105.50
Gary, Ind. U5	99.50
Geneva, Utah C11	99.50
Houston S5	104.50
Johnstown, Pa. B2	99.50
Lackawanna, N.Y. B2	99.50
Los Angeles B3	105.50
Midland, Pa. C18	96.00
Munhall, Pa. U5	99.50
Owensboro, Ky. C8	96.00
Seattle B3	109.50
Sharon, Pa. S3	96.00
S. Chicago R2, U5, W14	99.50
S. Duquesne, Pa. U5	99.50
S. San Francisco B3	105.50
Warren, O. C17	99.50
<b>Alloy, Forging (NT)</b>	
Bethlehem, Pa. R2	\$119.00
Bridgeport, Conn. C32	114.00
Buffalo R2	119.00
Canton, O. R2, T7	119.00
Conshohocken, Pa. A3	121.00
Detroit S41	114.00
Economy, Pa. B14	114.00
Farrell, Pa. S3	114.00
Fontana, Calif. K1	135.00
Gary, Ind. U5	119.00
Houston S5	124.00
Ind. Harbor, Ind. Y1	119.00
Johnstown, Pa. B2	119.00
Lackawanna, N.Y. B2	119.00
Los Angeles B3	134.00
Lowellville, O. S3	114.00
Massillon, O. R2	119.00
Midland, Pa. C18	114.00
Munhall, Pa. U5	119.00
Owensboro, Ky. G8	114.00
Sharon, Pa. S3	114.00
S. Chicago R2, U5, W14	119.00
S. Duquesne, Pa. U5	119.00
Sterling, O. Y1	119.00
Warren, O. C17	119.00

<b>Carbon, Forging (NT)</b>	
Bessemer, Pa. N5	\$99.50
Buffalo R2	99.50
Canton, O. R2	102.00
Clairton, Pa. U5	99.50
Conshohocken, Pa. A3	101.00
Ensley, Ala. T2	99.50
Fairfield, Ala. T2	99.50
Fontana, Calif. K1	105.50
Gary, Ind. U5	99.50
Geneva, Utah C11	99.50
Houston S5	104.50
Johnstown, Pa. B2	99.50
Lackawanna, N.Y. B2	99.50
Los Angeles B3	105.50
Midland, Pa. C18	96.00
Munhall, Pa. U5	99.50
Owensboro, Ky. C8	96.00
Seattle B3	109.50
Sharon, Pa. S3	96.00
S. Chicago R2, U5, W14	99.50
S. Duquesne, Pa. U5	99.50
S. San Francisco B3	105.50
Warren, O. C17	99.50
<b>Alloy, Forging (NT)</b>	
Bethlehem, Pa. R2	\$119.00
Bridgeport, Conn. C32	114.00
Buffalo R2	119.00
Canton, O. R2, T7	119.00
Conshohocken, Pa. A3	121.00
Detroit S41	114.00
Economy, Pa. B14	114.00
Farrell, Pa. S3	114.00
Fontana, Calif. K1	135.00
Gary, Ind. U5	119.00
Houston S5	124.00
Ind. Harbor, Ind. Y1	119.00
Johnstown, Pa. B2	119.00
Lackawanna, N.Y. B2	119.00
Los Angeles B3	134.00
Lowellville, O. S3	114.00
Massillon, O. R2	119.00
Midland, Pa. C18	114.00
Munhall, Pa. U5	119.00
Owensboro, Ky. G8	114.00
Sharon, Pa. S3	114.00
S. Chicago R2, U5, W14	119.00
S. Duquesne, Pa. U5	119.00
Sterling, O. Y1	119.00
Warren, O. C17	119.00

<b>Carbon, Forging (NT)</b>	
Bessemer, Pa. N5	\$99.50
Buffalo R2	99.50
Canton, O. R2	102.00
Clairton, Pa. U5	99.50
Conshohocken, Pa. A3	101.00
Ensley, Ala. T2	99.50
Fairfield, Ala. T2	99.50
Fontana, Calif. K1	105.50
Gary, Ind. U5	99.50
Geneva, Utah C11	99.50
Houston S5	104.50
Johnstown, Pa. B2	99.50
Lackawanna, N.Y. B2	99.50
Los Angeles B3	105.50
Midland, Pa. C18	96.00
Munhall, Pa. U5	99.50
Owensboro, Ky. C8	96.00
Seattle B3	109.50
Sharon, Pa. S3	96.00
S. Chicago R2, U5, W14	99.50
S. Duquesne, Pa. U5	99.50
S. San Francisco B3	105.50
Warren, O. C17	99.50
<b>Alloy, Forging (NT)</b>	
Bethlehem, Pa. R2	\$119.00
Bridgeport, Conn. C32	114.00
Buffalo R2	119.00
Canton, O. R2, T7	119.00
Conshohocken, Pa. A3	121.00
Detroit S41	114.00
Economy, Pa. B14	114.00
Farrell, Pa. S3	114.00
Fontana, Calif. K1	135.00
Gary, Ind. U5	119.00
Houston S5	124.00
Ind. Harbor, Ind. Y1	119.00
Johnstown, Pa. B2	119.00
Lackawanna, N.Y. B2	119.00
Los Angeles B3	134.00
Lowellville, O. S3	114.00
Massillon, O. R2	119.00
Midland, Pa. C18	114.00
Munhall, Pa. U5	119.00
Owensboro, Ky. G8	114.00
Sharon, Pa. S3	114.00
S. Chicago R2, U5, W14	119.00
S. Duquesne, Pa. U5	119.00
Sterling, O. Y1	119.00
Warren, O. C17	119.00

## STRUCTURALS

<b>Carbon Steel Std. Shapes</b>	
Alabama City, Ala. R2	5.275
Atlanta A11	5.475
Aliquippa, Pa. J5	5.275
Bessemer, Ala. T2	5.50
Bethlehem, Pa. B2	5.55
Birmingham C15	5.275
Clairton, Pa. U5	5.50
Fairfield, Ala. T2	5.50
Fontana, Calif. K1	6.075
Gary, Ind. U5	5.50
Geneva, Utah C11	5.50
Houston S5	5.60
Ind. Harbor, Ind. I-2, Y1	5.275
Johnstown, Pa. B2	5.55
Joliet, Ill. P22	5.275
Kansas City, Mo. S5	5.60
Lackawanna, N.Y. B2	5.55
Los Angeles B3	5.975
Minneapolis, Colo. C10	5.575
Munhall, Pa. U5	5.50
Niles, Calif. P1	5.925
Phoenixville, Pa. P4	5.55
Portland, Ore. O4	6.025
Seattle B3	6.025
S. Chicago, Ill. U5, W14	5.50
S. San Francisco B3	5.925
Sterling, Ill. N15	5.275
Torrance, Calif. C11	5.975
Weirton, W. Va. W6	5.275
<b>Wide Flange</b>	
Bethlehem, Pa. B2	5.55
Clairton, Pa. U5	5.50
Fontana, Calif. K1	6.225
Indiana Harbor, Ind. I-2	5.275
Lackawanna, N.Y. B2	5.55
Munhall, Pa. U5	5.50
Phoenixville, Pa. P4	5.325
S. Chicago, Ill. U5	5.50
Weirton, W. Va. W6	5.275

<b>Carbon Steel Std. Shapes</b>	
Alabama City, Ala. R2	5.275
Atlanta A11	5.475
Aliquippa, Pa. J5	5.275
Bessemer, Ala. T2	5.50
Bethlehem, Pa. B2	5.55
Birmingham C15	5.275
Clairton, Pa. U5	5.50
Fairfield, Ala. T2	5.50
Fontana, Calif. K1	6.075
Gary, Ind. U5	5.50
Geneva, Utah C11	5.50
Houston S5	5.60
Ind. Harbor, Ind. I-2, Y1	5.275
Johnstown, Pa. B2	5.55
Joliet, Ill. P22	5.275
Kansas City, Mo. S5	5.60
Lackawanna, N.Y. B2	5.55
Los Angeles B3	5.975
Minneapolis, Colo. C10	5.575
Munhall, Pa. U5	5.50
Niles, Calif. P1	5.925
Phoenixville, Pa. P4	5.55
Portland, Ore. O4	6.025
Seattle B3	6.025
S. Chicago, Ill. U5, W14	5.50
S. San Francisco B3	5.925
Sterling, Ill. N15	5.275
Torrance, Calif. C11	5.975
Weirton, W. Va. W6	5.275
<b>Wide Flange</b>	
Bethlehem, Pa. B2	5.55
Clairton, Pa. U5	5.50
Fontana, Calif. K1	6.225
Indiana Harbor, Ind. I-2	5.275
Lackawanna, N.Y. B2	5.55
Munhall, Pa. U5	5.50
Phoenixville, Pa. P4	5.325
S. Chicago, Ill. U5	5.50
Weirton, W. Va. W6	5.275

H.S., L.A. Std. Shapes	
Aliquippa, Pa. J5	7.75
Bessemer, Ala. T2	8.05
Bethlehem, Pa. B2	8.15
Clairton, Pa. U5	8.05
Fairfield, Ala. T2	8.05
Fontana, Calif. K1	8.55
Gary, Ind. U5	8.05
Geneva, Utah C11	8.05
Houston S5	8.15
Ind. Harbor, Ind. I-2, Y1	7.75
Johnstown, Pa. B2	8.10
Kansas City, Mo. S5	8.15
Lackawanna, N.Y. B2	8.10
Los Angeles B3	8.45
Munhall, Pa. U5	8.05
Seattle B3	8.50
S. Chicago, Ill. U5, W14	8.05
S. San Francisco B3	8.40
Struthers, O. Y1	7.75



# BARS, Reinforcing (To fabricators)

Alabama City, Ala. R2	5.675
Atlanta A11	5.425
Birmingham C15	5.425
Buffalo R2	5.675
Cleveland R2	5.675
Ecorse, Mich. G5	5.675
Emeryville, Calif. J7	6.175
Fairfield, Ala. T2	6.175
Fairless, Pa. U5	5.825
Fontana, Calif. K1	6.125
Ft. Worth, Tex. (4) (26) T4	5.875
Gary, Ind. U5	5.675
Houston S5	5.925
Ind. Harbor, Ind. I-2, Y1	5.675
Johnstown, Pa. B2	5.675
Joliet, Ill. P22	5.675
Kansas City, Mo. S5	5.925
Kokomo, Ind. C16	5.925
Lackawanna, N.Y. B2	5.675
Los Angeles B3	6.125
Madison, Ill. L1	5.625
Milton, Pa. M18	5.575
Minneapolis, Colo. C10	5.875
Niles, Calif. P1	6.125
Pittsburgh, Calif. C11	6.375
Pittsburgh J5	5.675
Portland, Ore. O4	6.175
Sand Springs, Okla. S5	5.925
Seattle B3, N14	6.175
S. Chicago, Ill. R2, W14	5.675
S. Duquesne, Pa. U5	5.675
S. San Francisco B3	6.175
Sparrows Point, Md. B2	5.675
Sterling, Ill. (1) N15	5.425
Sterling, Ill. N15	5.525
Struthers, O. Y1	5.675
Tonawanda, N.Y. B12	6.000
Torrance, Calif. C11	6.375
Youngstown R2, U5	5.675

# BARS, Reinforcing (Fabricated; to Consumers)

Boston B2, U8	7.65
Chicago U8	6.91
Cleveland U8	6.89
Houston S5	7.35
Johnstown, Pa. B2	7.08
Kansas City, Mo. S5	7.08
Lackawanna, N.Y. B2	6.85
Marion, O. P11	6.70
Newark, N.J. U8	7.55
Philadelphia U8	7.38
Pittsburgh J5, U8	7.10
Sand Springs, Okla. S5	7.60
Seattle B3, N14	7.70
Sparrows Pt., Md. B2	7.08
St. Paul U8	7.92
Williamsport, Pa. S19	7.00

# BARS, Wrought Iron

Economy, Pa. (S.R.) B14	14.45
Economy, Pa. (D.R.) B14	18.00
Economy (Staybolt) B14	18.45

# RAIL STEEL BARS

Chicago Hts. (3) C2, I-2	5.575
Chicago Hts. (4) (44) I-2	5.675
Chicago Hts. (4) C2	5.425
Franklin, Pa. (3) F5	5.325
Franklin, Pa. (4) F5	5.425
Jersey Shore, Pa. (3) J8	5.30
Marion, O. (3) P11	5.325
Tonawanda (3) B12	5.325
Tonawanda (4) B12	6.00
Williamsport, Pa. (3) S19	5.50

# SHEETS

## SHEETS, Hot-Rolled Steel (18 Gage and Heavier)

Alabama City, Ala. R2	5.10
Allenport, Pa. P7	5.10
Aliquippa, Pa. J5	5.10
Ashland, Ky. (8) A10	5.10
Cleveland J5, R2	5.10
Conshohocken, Pa. A3	5.15
Detroit (8) M1	5.10
Ecorse, Mich. G5	5.10
Fairfield, Ala. T2	5.10
Fairless, Pa. U5	5.15
Fontana, Calif. K1	5.675
Gary, Ind. U5	5.10
Geneva, Utah C11	5.20
Granite City, Ill. (8) G4	5.20
Ind. Harbor, Ind. I-2, Y1	5.10
Irvin, Pa. U5	5.10
Lackawanna, N.Y. B2	5.10
Mansfield, O. E6	4.925
Munhall, Pa. U5	5.10
Newport, Ky. (8) A2	4.925
Niles, O. M21, S3	5.10
Pittsburgh, Calif. C11	5.80
Pittsburgh J5	5.10
Portsmouth, O. P12	5.10
Riverdale, Ill. A1	5.10
Sharon, Pa. S3	5.10
S. Chicago, Ill. U5, W14	5.10
Sparrows Point, Md. B2	5.10
Stuebenville, O. W10	5.10
Warren, O. R2	5.10
Weirton, W. Va. W6	5.10
Youngstown U5, Y1	5.10

## SHEETS, H.R. (19 Ga. & Lighter)

Niles, O. M21	6.05
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## SHEETS, H.R. Alloy

Gary, Ind. U5	8.10
Ind. Harbor, Ind. Y1	8.10
Irvin, Pa. U5	8.10
Munhall, Pa. U5	8.10
Newport, Ky. A2	8.10
Youngstown U5, Y1	8.10

# SHEETS, H.R. (14 Ga. & Heavier)

High-Strength, Low-Alloy	
Aliquippa, Pa. J5	7.525
Cleveland J5, R2	7.525
Conshohocken, Pa. A3	7.575
Ecorse, Mich. G5	7.525
Fairfield, Ala. T2	7.525
Fairless, Pa. U5	7.575
Farrell, Pa. S3	7.525
Fontana, Calif. K1	8.025
Gary, Ind. U5	7.525
Ind. Harbor, Ind. I-2, Y1	7.525
Irvin, Pa. U5	7.525
Lackawanna (35) B2	7.525
Munhall, Pa. U5	7.525
Pittsburgh J5	7.525
S. Chicago, Ill. U5, W14	7.525
Sharon, Pa. S3	7.525
Sparrows Point (36) B2	7.525
Warren, O. R2	7.525
Weirton, W. Va. W6	7.525
Youngstown U5, Y1	7.525

## SHEETS, Hot-Rolled Ingot Iron (18 Gage and Heavier)

Ashland, Ky. (8) A10	5.35
Cleveland R2	5.875
Warren, O. R2	5.875

## SHEETS, Cold-Rolled Ingot Iron

Cleveland R2	7.05
Middletown, O. A10	6.775
Warren, O. R2	7.05

## SHEETS, Cold-Rolled Steel (Commercial Quality)

Alabama City, Ala. R2	6.275
Allenport, Pa. P7	6.275
Aliquippa, Pa. J5	6.275
Cleveland J5, R2	6.275
Conshohocken, Pa. A3	6.325
Detroit M1	6.275
Ecorse, Mich. G5	6.275
Fairfield, Ala. T2	6.275
Fairless, Pa. U5	6.325
Follansbee, W. Va. F4	6.275
Fontana, Calif. K1	7.30
Gary, Ind. U5	6.275
Granite City, Ill. G4	6.375
Ind. Harbor, Ind. I-2, Y1	6.275
Irvin, Pa. U5	6.275
Lackawanna, N.Y. B2	6.275
Mansfield, O. E6	6.05
Middletown, O. A10	6.275
Newport, Ky. A2	6.05
Pittsburgh, Calif. C11	7.225
Pittsburgh J5	6.275
Portsmouth, O. P12	6.275
Sparrows Point, Md. B2	6.275
Stuebenville, O. W10	6.275
Warren, O. R2	6.275
Weirton, W. Va. W6	6.275
Yorkville, O. W10	6.275
Youngstown Y1	6.275

# SHEETS, Cold-Rolled, High-Strength, Low Alloy

Aliquippa, Pa. J5	9.275
Cleveland J5, R2	9.275
Ecorse, Mich. G5	9.275
Fairless, Pa. U5	9.325
Fontana, Calif. K1	10.275
Gary, Ind. U5	9.275
Ind. Harbor, Ind. I-2, Y1	9.275
Irvin, Pa. U5	9.275
Lackawanna (37) B2	9.275
Pittsburgh J5	9.275
Sparrows Point (38) B2	9.275
Warren, O. R2	9.275
Weirton, W. Va. W6	9.275
Youngstown Y1	9.275

## SHEETS, Culvert

Ashland, Ky. A10	7.225	7.475
Canton, O. R2	7.225	7.475
Fairfield, T2	7.225	7.475
Gary, Ind. U5	7.225	7.475
Granite City, Ill. G4	7.325	
Ind. Harbor I-2	7.225	7.475
Irvin, Pa. U5	7.225	7.475
Kokomo, Ind. C16	7.325	
Martins Ferry, W. Va. W10	7.225	7.475
Pitts. Calif. C11	7.975	
Pittsburgh J5	7.225	
Sparrows Pt. B2	7.225	

## SHEETS, Culvert—Pure Iron

Ind. Harbor, Ind. I-2	7.475
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## SHEETS, Galvanized Steel Hot-Dipped

Alabama City, Ala. R2	6.875†
Ashland, Ky. A10	6.875†
Canton, O. R2	6.875†
Dover, O. E6	6.80†
Fairfield, Ala. T2	6.875†
Gary, Ind. U5	6.875†
Granite City, Ill. G4	6.975*
Ind. Harbor, Ind. I-2	6.875†
Irvin, Pa. U5	6.875†
Kokomo, Ind. C16	6.975†
Martins Ferry, O. W10	6.875†
Middletown, O. A10	6.875†
Pittsburgh, Calif. C11	7.625*
Pittsburgh J5	6.875†
Sparrows Pt., Md. B2	6.875†
Warren, O. R2	6.875†
Weirton, W. Va. W6	6.875*

\*Continuous and noncontinuous. †Continuous. ‡Noncontinuous.

# SHEETS, Well Casing

Fontana, Calif. K1	7.175
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## SHEETS, Galvanized High-Strength, Low-Alloy

Irvin, Pa. U5	10.025
Sparrows Pt. (39) B2	10.025
Pittsburgh J5	10.025

## SHEETS, Galvannealed Steel

Canton, O. R2	7.275
Irvin, Pa. U5	7.275

## SHEETS, Galvanized Ingot Iron (Hot-Dipped Continuous)

Ashland, Ky. A10	7.125
Middletown, O. A10	7.125

## SHEETS, Electrogalvanized

Cleveland (28) R2	7.65
Niles, O. (28) R2	7.65
Youngstown J5	7.50
Weirton, W. Va. W6	7.50

## SHEETS, Aluminum Coated

Butler, Pa. A10 (type 1)	9.525
Butler, Pa. A10 (type 2)	9.625

## SHEETS, Enameling Iron

Ashland, Ky. A10	6.775
Cleveland R2	6.775
Fairfield, Ala. T2	6.775
Gary, Ind. U5	6.775
Granite City, Ill. G4	6.875
Ind. Harbor, Ind. I-2, Y1	6.775
Irvin, Pa. U5	6.775
Middletown, O. A10	6.775
Niles, O. M21, S3	6.625
Youngstown Y1	6.775

## BLUED STOCK, 29 Gage

Follansbee, W. Va. F4	8.70
Ind. Harbor, Ind. I-2	8.70
Yorkville, O. W10	8.475

## SHEETS, Long Term, Steel (Commercial Quality)

Beech Bottom, W. Va. W10	7.225
Gary, Ind. U5	7.225
Mansfield, O. E6	7.00
Middletown, O. A10	7.225
Niles, O. M21, S3	7.00
Warren, O. R2	7.225
Weirton, W. Va. W6	7.225

## SHEETS, Long Term, Ingot Iron

Middletown, O. A10	7.625
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# Key To Producers

A1 Acme Steel Co.	wire Spencer Steel Div., Colo. Fuel & Iron	J4 Johnson Steel & Wire Co.	P4 Phoenix Iron & Steel Co., Sub. of Barium Steel Corp.	S30 Sierra Drawn Steel Corp.
A2 Acme-Newport Steel Co.	C23 Charter Wire Inc.	J5 Jones & Laughlin Steel	P5 Pilgrim Drawn Steel	S40 Seneca Steel Service
A3 Alan Wood Steel Co.	C24 G. O. Carlson Inc.	J6 Joslyn Mfg. & Supply	P6 Pittsburgh Coke & Chem.	S41 Stainless Steel Div., J&L Steel Corp.
A4 Allegheny Ludlum Steel	C32 Carpenter Steel of N. Eng.	J7 Judson Steel Corp.	P7 Pittsburgh Steel Co.	S42 Southern Elec. Steel Co.
A5 Alloy Metal Wire Div., H. K. Porter Co. Inc.	D2 Detroit Steel Corp.	J8 Jersey Shore Steel Co.	P11 Pollak Steel Co.	T2 Tenn. Coal & Iron Div., U. S. Steel Corp.
A6 American Shm Steel Co.	D3 Dearborn Div., Sharon Steel Corp.	K1 Kaiser Steel Corp.	P12 Portsmouth Div., Detroit Steel Corp.	T3 Tenn. Products & Chemical Corp.
A7 American Steel & Wire Div., U. S. Steel Corp.	D4 Disston Div., H. K. Porter Co. Inc.	K2 Keokuk Electro-Metals	P13 Precision Drawn Steel	T4 Texas Steel Co.
A8 Anchor Drawn Steel Co.	D6 Driver-Harris Co.	K3 Keystone Drawn Steel	P14 Pitts. Screw & Bolt Co.	T5 Thomas Strip Div., Pittsburgh Steel Co.
A9 Angell Nail & Chaplet	D7 Dickson Weatherproof Nail Co.	K4 Keystone Steel & Wire	P15 Pittsburgh Metallurgical	T6 Thompson Wire Co.
A10 Armo Steel Corp.	D8 Damascus Tube Co.	K7 Kenmore Metals Corp.	P16 Page Steel & Wire Div., American Chain & Cable	T7 Timken Roller Bearing
A11 Atlantic Steel Co.	D9 Wilbur B. Driver Co.	L1 Laclede Steel Co.	P17 Plymouth Steel Corp.	T9 Tonawanda Iron Div., Am. Rad. & Stan. San.
B1 Babcock & Wilcox Co.	E1 Eastern Gas & Fuel Assoc.	L2 LaSalle Steel Co.	P19 Pitts. Rolling Mills	T13 Tube Methods Inc.
B2 Bethlehem Steel Co.	E2 Eastern Stainless Steel	L3 Latrobe Steel Co.	P20 Prod. Steel Strip Corp.	T19 Techalloy Co. Inc.
B3 Beth. Pac. Coast Steel	E4 Electro Metallurgical Co.	L6 Lone Star Steel Co.	P22 Phoenix Mfg. Co.	U4 Universal-Cyclops Steel
B4 Blair Strip Steel Co.	E5 Elliott Bros. Steel Co.	L7 Lukens Steel Co.	P24 Phil. Steel & Wire Corp.	U5 United States Steel Corp.
B5 Bliss & Laughlin Inc.	E6 Empire-Reeves Steel Corp.	L8 Leschen Wire Rope Div., H. K. Porter Co. Inc.	R2 Republic Steel Corp.	U6 U. S. Pipe & Foundry
B6 Braeburn Alloy Steel	F2 Firth Sterling Inc.	M1 McLouth Steel Corp.	R3 Rhode Island Steel Corp.	U7 Ulbrich Stainless Steels
B7 Brainerd Steel Div., Sharon Steel Corp.	F3 Fitzsimmons Steel Co.	M4 Mahoning Valley Steel	R5 Roebbling's Sons, John A.	U8 U. S. Steel Supply Div., U. S. Steel Corp.
B10 E. & G. Brooke, Wickwire Spencer Steel Div., Colo. Fuel & Iron	F4 Follansbee Steel Corp.	M6 Mercer Pipe Div., Sawhill Tubular Products	R6 Rome Strip Steel Co.	V2 Vanadium-Alloys Steel
B11 Buffalo Bolt Co., Div., Buffalo Eclipse Corp.	F5 Franklin Steel Div., Borg-Warner Corp.	M8 Mid-States Steel & Wire	R8 Reliance Div., Eaton Mfg.	V3 Vulcan-Kidd Steel Div., H. K. Porter Co.
B12 Buffalo Steel Corp.	F6 Fretz-Moon Tube Co.	M12 Moltrup Steel Products	R9 Rome Mfg. Co.	W1 Wallace Barnes Steel Div., Associated Spring Corp.
B14 A. M. Byers Co.	F7 Ft. Howard Steel & Wire	M14 McInnes Steel Co.	R10 Rodney Metals Inc.	W2 Wallingford Steel Co.
B15 J. Bishop & Co.	F8 Ft. Wayne Metals Inc.	M16 Md. Fine & Special Wire	S1 Seneca Wire & Mfg. Co.	W3 Washburn Wire Co.
C1 Calstrip Steel Corp.	G4 Granite City Steel Co.	M17 Metal Forming Corp.	S3 Sharon Steel Corp.	W4 Washington Steel Corp.
C2 Calumet Steel Div., Borg-Warner Corp.	G5 Great Lakes Steel Corp.	M18 Milton Steel Div., Merritt-Chapman & Scott	S4 Sharon Tube Co.	W6 Weirton Steel Co.
C4 Carpenter Steel Co.	G6 Greer Steel Co.	M21 Mallory-Sharon Metals Corp.	S5 Sheffield Div., Armo Steel Corp.	W8 Western Automatic Machine Screw Co.
C9 Colonial Steel Co.	G8 Green River Steel Corp.	M22 Mill Strip Products Co.	S6 Shenango Furnace Co.	W9 Wheatland Tube Co.
C10 Colorado Fuel & Iron	H1 Hanna Furnace Corp.	N1 National-Standard Co.	S7 Simmons Co.	W10 Wheeling Steel Corp.
C11 Columbia-Geneva Steel	H7 Helical Tube Co.	N2 National Supply Co.	S8 Simonds Saw & Steel Co.	W12 Wickwire Spencer Steel Div., Colo. Fuel & Iron
C12 Columbia Steel & Shaft.	I-1 Igoe Bros. Inc.	N3 National Tube Div., U. S. Steel Corp.	S12 Spencer Wire Corp.	W13 Wilson Steel & Wire Co.
C13 Columbia Tool Steel Co.	I-2 Inland Steel Co.	N5 Nelsen Steel & Wire Co.	S13 Standard Forgings Corp.	W14 Wisconsin Steel Div., International Harvester
C14 Compressed Steel Shaft.	I-3 Interlake Iron Corp.	N6 New England High Carbon Wire Co.	S14 Standard Tube Co.	W15 Woodward Iron Co.
C15 Connors Steel Div., H. K. Porter Co. Inc.	I-4 Ingersoll Steel Div., Borg-Warner Corp.	N8 Newman-Crosby Steel	S15 Stanley Works	W18 Wyckoff Steel Co.
C16 Continental Steel Corp.	I-6 Ivins Steel Tube Works	N14 Northwest Steel Rolling Mills Inc.	S17 Superior Drawn Steel Co.	Y1 Youngstown Sheet & Tube
C17 Copperweld Steel Co.	I-7 Indiana Steel & Wire Co.	N15 Northwestern S.&W. Co.	S18 Superior Steel Div., Copperweld Steel Co.	
C18 Crucible Steel Co.	J1 Jackson Iron & Steel Co.	N20 Neville Ferro Alloy Co.	S19 Sweet's Steel Co.	
C19 Cumberland Steel Co.	J3 Jessop Steel Co.	O4 Oregon Steel Mills	S20 Southern States Steel	
C20 Cuyahoga Steel & Wire		P1 Pacific States Steel Corp.	S23 Superior Tube Co.	
C22 Claymont Plant, Wick-		P2 Pacific Tube Co.	S25 Stainless Welded Prod.	
			S26 Specialty Wire Co. Inc.	



## STRIP

### STRIP, Hot-Rolled Carbon

Ala. City, Ala. (27) R2	5.10
Allenport, Pa. P7	5.10
Alton, Ill. L1	5.125
Ashland, Ky. (8) A10	5.10
Atlanta A11	4.925
Bessemer, Ala. T2	5.10
Birmingham C15	4.925
Buffalo (27) R2	5.10
Conshohocken, Pa. A3	5.15
Detroit M1	5.10
Ecorse, Mich. G5	5.10
Fairfield, Ala. T2	5.10
Fontana, Calif. K1	5.675
Gary, Ind. U5	5.10
Ind. Harbor, Ind. I-2, Y1	5.10
Johnstown, Pa. (25) B2	5.10
Lackawanna, N.Y. (25) B2	5.10
Los Angeles (25) B3	5.85
Minneapolis, Colo. C10	6.025
Riverdale, Ill. A1	5.10
San Francisco S7	6.35
Seattle (25) B3	6.10
Seattle N14	6.35
Sharon, Pa. S3	5.10
S. Chicago W14	5.10
S. San Francisco (25) B3	5.85
Sparrows Point, Md. B2	5.10
Sterling, Ill. (1) N15	4.925
Sterling, Ill. N15	5.025
Torrance, Calif. C11	5.85
Warren, O. R2	5.10
Weirton, W. Va. W6	5.10
Youngstown U5	5.10

### STRIP, Hot-Rolled Alloy

Carnegie, Pa. S18	8.10
Farrell, Pa. S3	8.10
Gary, Ind. U5	8.10
Houston S5	8.35
Ind. Harbor, Ind. Y1	8.10
Kansas City, Mo. S5	8.35
Los Angeles B3	9.30
Lowellville, O. S3	8.10
Newport, Ky. A2	8.10
Sharon, Pa. A2, S3	8.10
S. Chicago, Ill. W14	8.10
Youngstown U5, Y1	8.10

### STRIP, Hot-Rolled

#### High-Strength, Low-Alloy

Bessemer, Ala. T2	7.575
Conshohocken, Pa. A3	7.575
Ecorse, Mich. G5	7.575
Fairfield, Ala. T2	7.575
Farrell, Pa. S3	7.575
Gary, Ind. U5	7.575
Ind. Harbor, Ind. I-2, Y1	7.575
Lackawanna, N.Y. B2	7.575
Los Angeles (25) B3	8.325
Seattle (25) B3	8.575
Sharon, Pa. S3	7.575
S. Chicago, Ill. W14	7.325
S. San Francisco (25) B3	8.325
Sparrows Point, Md. B2	7.575
Warren, O. R2	7.575
Weirton, W. Va. W6	7.575
Youngstown U5, Y1	7.575

### STRIP, Hot-Rolled Ingot Iron

Ashland, Ky. (8) A10	5.35
Warren, O. R2	5.875

### STRIP, Cold-Rolled Carbon

Anderson, Ind. G6	7.425
Baltimore T6	7.15
Boston T6	7.70
Buffalo S40	7.15
Cleveland A7, J5	7.425
Dearborn, Mich. D3	7.425
Detroit D2, M1, P20	7.425
Dover, O. G6	7.425
Ecorse, Mich. G5	7.425
Evanston, Ill. M22	7.525
Fallansbee, W. Va. F4	7.425
Fontana, Calif. K1	9.00
Franklin Park, Ill. T6	7.25
Ind. Harbor, Ind. Y1	7.425
Indianapolis J5	7.575
Los Angeles C1	9.25
New Bedford, Mass. R10	7.60
New Britain, Conn. S15	7.60
New Castle, Pa. B4, E5	7.15
New Haven, Conn. D2	7.875
New Kensington, Pa. A6	7.15
Pawtucket, R.I. R3	7.80
Pawtucket, R.I. N8	7.70
Philadelphia P24	7.70
Pittsburgh J5	7.425
Riverdale, Ill. A1	7.525
Rome, N.Y. (32) R6	7.15
Sharon, Pa. S3	7.425
Trenton, N.J. (31) R5	8.60
Wallingford, Conn. W2	7.60
Warren, O. R2, T5	7.425
Weirton, W. Va. W6	7.425
Worcester, Mass. A7	7.975
Youngstown J5, Y1	7.425

### STRIP, Cold-Rolled Alloy

Boston T6	15.40
Carnegie, Pa. S18	15.05
Cleveland A7	15.05
Dover, O. G6	15.05
Farrell, Pa. S3	15.05
Franklin Park, Ill. T6	15.05
Harrison, N.J. C18	15.05
Indianapolis J5	15.20
Lowellville, O. S3	15.05
Pawtucket, R.I. N8	15.40
Riverdale, Ill. A1	15.05
Sharon, Pa. S3	15.05
Worcester, Mass. A7	15.35
Youngstown J5	15.05

### STRIP, Cold-Rolled

#### High-Strength, Low-Alloy

Cleveland A7	10.80
Dearborn, Mich. D3	10.80
Dover, O. G6	10.45
Ecorse, Mich. G5	10.50
Farrell, Pa. S3	10.80
Ind. Harbor, Ind. Y1	11.00
Sharon, Pa. S3	10.80
Warren, O. R2	10.80

### STRIP, Cold-Finished

#### Spring Steel (Annealed)

Baltimore T6	9.50	10.70	12.90	15.90	18.85
Boston T6	9.50	10.70	12.90	15.90	18.85
Bristol, Conn. W1	10.70	12.90	16.10	19.30	
Carnegie, Pa. S18	8.95	10.40	12.60	15.60	
Cleveland A7	8.95	10.40	12.60	15.60	18.55
Dearborn, Mich. D3	9.05	10.50	12.70		
Detroit D2	9.05	10.50	12.70	15.70	
Dover, O. G6	8.95	10.40	12.60	15.60	18.55
Evanston, Ill. M22	8.95	10.40	12.60	15.60	
Fosteria, O. S1	10.05	10.40	12.60	15.60	
Franklin Park, Ill. T6	9.05	10.40	12.60	15.60	18.55
Harrison, N.J. C18	12.90	16.10	19.30		
Indianapolis J5	9.10	10.55	12.60	15.60	18.55
Los Angeles C1	11.15	12.60	14.80	17.80	
Los Angeles J5	11.15	12.60	14.80		
New Britain, Conn. S15	9.40	10.70	12.90	15.90	18.85
New Castle, Pa. B4, E5	8.95	10.40	12.60	15.60	
New Haven, Conn. D2	9.40	10.70	12.90	15.90	
New Kensington, Pa. A6	8.95	10.40	12.60	15.60	
New York W3	10.70	12.90	16.10	19.30	
Pawtucket, R.I. N8	9.50	10.70	12.90	15.90	18.85
Riverdale, Ill. A1	9.05	10.40	12.60	15.60	18.55
Rome, N.Y. (32) R6	8.95	10.40	12.60	15.60	18.55
Sharon, Pa. S3	8.95	10.40	12.60	15.60	18.55
Trenton, N.J. R5	10.70	12.90	16.10	19.30	
Wallingford, Conn. W2	9.40	10.70	12.90	15.90	18.75
Warren, O. T5	8.95	10.40	12.60	15.60	18.55
Worcester, Mass. A7, T6	9.50	10.70	12.90	15.90	18.85
Youngstown J5	8.95	10.40	12.60	15.60	18.55

### Spring Steel (Tempered)

Bristol, Conn. W1	18.10	21.95	26.30
Buffalo W12	18.10		
Fosteria, O. S1	18.30	22.15	
Franklin Park, Ill. T6	18.45	22.30	26.65
Harrison, N.J. C18	18.10	21.95	26.30
New York W3	18.10	21.95	26.30
Palmer, Mass. W12	18.10		
Trenton, N.J. R5	18.10	21.95	26.30
Worcester, Mass. A7, T6	18.10	21.95	26.30
Youngstown J5	18.45	22.30	26.65

## TIN MILL PRODUCTS

### TIN PLATE, Electrolytic (Base Box)

	0.25 lb	0.50 lb	0.75 lb
Albuquerque, Pa. J5	\$8.75	\$9.00	\$9.40
Fairfield, Ala. T2	8.85	9.10	9.50
Fairless, Pa. U5	8.85	9.10	9.50
Fontana, Calif. K1	9.50	9.75	10.15
Gary, Ind. U5	8.75	9.00	9.40
Granite City, Ill. G4	8.85	9.10	9.50
Indiana Harbor, Ind. I-2, Y1	8.75	9.00	9.40
Irvin, Pa. U5	8.75	9.00	9.40
Niles, O. R2	8.75	9.00	9.40
Pittsburgh, Calif. C11	9.50	9.75	10.15
Sparrows Point, Md. B2	8.85	9.10	9.50
Weirton, W. Va. W6	8.75	9.00	9.40
Yorkville, O. W10	8.75	9.00	9.40

### ELECTROTIN (22-27 Gage; Dollars per 100 lb)

Albuquerque, Pa. J5	7.725	7.925	
Niles, O. R2	7.725	7.925	8.125

### TIN PLATE, American 1.25 1.50 lb lb

Albuquerque, Pa. J5	\$10.05	\$10.30
Fairfield, Ala. T2	10.15	10.40
Fairless, Pa. U5	10.15	10.40
Fontana, Calif. K1	10.80	11.05
Gary, Ind. U5	10.05	10.30
Ind. Harb. Y1	10.05	10.30
Pitts., Calif. C11	10.80	11.05
Sp. Pt., Md. B2	10.15	10.40
Weirton, W. Va. W6	10.05	10.30
Yorkville, O. W10	10.05	10.30

### BLACK PLATE (Base Box)

Albuquerque, Pa. J5	\$7.85
Fairfield, Ala. T2	7.95
Fairless, Pa. U5	7.95
Fontana, Calif. K1	8.60
Gary, Ind. U5	7.85
Granite City, Ill. G4	7.95
Ind. Harbor, Ind. I-2, Y1	7.85
Irvin, Pa. U5	7.85

Weirton, W. Va. W6 10.85

Youngstown Y1 11.00

### STRIP, Cold-Rolled Ingot Iron

Warren, O. R2 8.175

### STRIP, C.R. Electroalvanized

Cleveland A7	7.15*
Dover, O. G6	7.425*
Evanston, Ill. M22	7.25*
Riverdale, Ill. A1	7.25*
Warren, O. B9, T5	7.15*
Worcester, Mass. A7	7.70*
Youngstown J5	7.15*

\*Plus galvanizing extras.

### STRIP, Galvanized

(Continuous)

Sharon, Pa. S3 7.50

### TIGHT COOPERAGE HOOP

Atlanta A11	5.65
Riverdale, Ill. A1	5.50
Sharon, Pa. S3	5.525
Youngstown U5	5.525

## SILICON STEEL

### COILS & CUT LENGTHS (22 Ga.)

Field	Armature	Electric	Motor	Dynamo
Beech Bottom, W. Va. W10	11.35	12.05	13.15	14.20
Brackenridge, Pa. A4		12.05	13.15	14.20
Granite City, Ill. G4	9.975*11.30*	12.00*	13.15*	
Indiana Harbor, Ind. I-2	9.875*11.20*	11.90*	13.05*	
Mansfield, O. B8	9.625*11.35	12.05	13.15	14.20
Vandergrift, Pa. U5	9.875*11.70	12.40	13.55	14.65
Warren, O. R2	9.875*11.70	12.40	13.55	14.65
Zanesville, O. A10	11.70†	12.40	13.55	14.65

Vandergrift, Pa. U5

Stator 8.10

### SHEETS (22 Ga., coils & cut lengths T-72

Fully Processed (Semiprocessed ½c lower)				
Beech Bottom, W. Va. W10	15.70	16.30	16.80	17.85
Vandergrift, Pa. U5	15.70	16.30	16.80	17.85
Zanesville, O. A10	15.70	16.30	16.80	17.85

### C.R. COILS & CUT

Grain Oriented	T-100	T-90	T-80	T-73	T-66	T-72
Brackenridge, Pa. A4	17.60	19.20	19.70	20.20	20.70	15.25†
Butler, Pa. A10		19.70	20.20	20.70		
Vandergrift, Pa. U5	17.10	18.10	19.70	20.20	20.70	15.70
Warren, O. R2						15.70†

\*Semiprocessed. †Fully processed only. ‡Coils, annealed, semiprocessed 1/2c lower. ††Coils only.

## WIRE

### WIRE, Manufacturers Bright, Low Carbon

Alabama City, Ala. R2	8.00
Albuquerque, Pa. J5	8.00
Alton, Ill. L1	7.85
Atlanta A11	7.65
Bartonville, Ill. K4	7.75
Buffalo W12	7.65
Chicago W13	8.00
Cleveland A7, C20	8.00
Crawfordsville, Ind. M8	7.75
Donora, Pa. A7	8.00
Duluth A7	8.00
Fairfield, Ala. T2	8.00
Fosteria, O. (24) S1	7.75
Houston S5	8.25
Jacksonville, Fla. M8	8.00
Johnstown, Pa. B2	8.00
Joliet, Ill. A7	8.00
Kansas City, Mo. S5	8.25
Kokomo, Ind. C16	7.75
Los Angeles B3	8.60
Minneapolis, Colo. C10	7.90
Monessen, Pa. P7, P16	8.00
N. Tonawanda, N.Y. B11	7.65
Palmer, Mass. W12	7.95
Pittsburgh, Calif. C11	8.95
Portsmouth, O. P12	8.00
Rankin, Pa. A7	8.00
S. Chicago, Ill. R2	8.00
S. San Francisco C10	8.60
Sparrows Point, Md. B2	8.10
Sterling, Ill. (1) N15	7.65
Sterling, Ill. N15	7.75
Struthers, O. Y1	8.00
Waukegan, Ill. A7	8.00
Worcester, Mass. A7	8.30

### WIRE, MB Spring, High-Carbon

Albuquerque, Pa. J5	9.75
Alton, Ill. L1	9.50
Bartonville, Ill. K4	9.40
Buffalo W12	9.30
Cleveland A7	9.30
Donora, Pa. A7	9.30
Duluth A7	9.30
Fosteria, O. S1	9.35
Johnstown, Pa. B2	9.75
Kansas City, Mo. S5	10.00
Los Angeles B3	10.25
Milbury, Mass. (12) N6	9.60
Minneapolis, Colo. C10	9.50
Monessen, Pa. P7, P16	9.75
Muncie, Ind. I-7	9.50
Palmer, Mass. (12) W12	9.60
Pittsburgh, Calif. C11	10.25
Portsmouth, O. P12	9.30
Roebing, N.J. R5	9.60
S. Chicago, Ill. R2	9.75
S. San Francisco C10	10.25
Sparrows Point, Md. B2	9.85
Struthers, O. Y1	9.75
Trenton, N.J. A7	9.60
Waukegan, Ill. A7	9.30
Worcester, A7, J4, T6	9.60

### WIRE, Fine & Weaving (8" Coils)

Alton, Ill. L1	15.8
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**WIRE, Tire Bead**  
 Bartonville, Ill. K4 .....16.55  
 Monessen, Pa. P16 .....16.55  
 Roebing, N.J. R5 .....17.05

**Wire, Cold-Rolled Flat**  
 Anderson, Ind. G6 .....11.65  
 Baltimore T6 .....11.95  
 Boston T6 .....11.95  
 Buffalo W12 .....11.65  
 Chicago W13 .....11.75  
 Cleveland A7 .....11.65  
 Crawfordville, Ind. M8 .....11.65  
 Dover, O. G6 .....11.65  
 Fostoria, O. S1 .....11.65  
 Franklin Park, Ill. T6 .....11.75  
 Kokomo, Ind. C16 .....11.65  
 Massillon, O. R8 .....11.65  
 Milwaukee C23 .....11.85  
 Monessen, Pa. P7, P16 .....11.65  
 Palmer, Mass. W12 .....11.95  
 Pawtucket, R.I. N8 .....11.95  
 Philadelphia P24 .....11.95  
 Riverdale, Ill. A1 .....11.75  
 Rome, N.Y. R6 .....11.65  
 Sharon, Pa. S3 .....11.65  
 Trenton, N.J. R5 .....11.95  
 Warren, O. B9 .....11.65  
 Worcester, Mass. A7, T6 .....11.95

**NAILS, Stock** Colo.  
 Alabama City, Ala. R2 .....173  
 Aliquippa, Pa. J5 .....173  
 Atlanta A11 .....175  
 Bartonville, Ill. K4 .....175  
 Chicago W13 .....173  
 Cleveland A9 .....173  
 Crawfordville, Ind. M8 .....175  
 Donora, Pa. A7 .....173  
 Duluth A7 .....173  
 Fairfield, Ala. T2 .....173  
 Houston S5 .....178  
 Jacksonville, Fla. M8 .....175  
 Johnstown, Pa. B2 .....173  
 Joliet, Ill. A7 .....173  
 Kansas City, Mo. S5 .....178  
 Kokomo, Ind. C16 .....175  
 Minneapolis, Colo. C10 .....178  
 Monessen, Pa. P7 .....173  
 Pittsburgh, Calif. C11 .....192  
 Rankin, Pa. A7 .....173  
 S. Chicago, Ill. R2 .....173  
 Sparrows Pt., Md. B2 .....173  
 Sterling, Ill. (7) N15 .....175  
 Worcester, Mass. A7 .....179  
 (To Wholesalers; per cwt)  
 Galveston, Tex. D7 .....\$9.10

**NAILS, Cut (100 lb keg)**  
 To Dealers (33)  
 Conshohocken, Pa. A3 .....\$9.80  
 Wheeling, W. Va. W10 .....9.80

**POLISHED STAPLES** Col.  
 Alabama City, Ala. R2 .....175  
 Aliquippa, Pa. J5 .....175  
 Atlanta A11 .....177  
 Bartonville, Ill. K4 .....177  
 Crawfordville, Ind. M8 .....177  
 Donora, Pa. A7 .....175  
 Duluth A7 .....175  
 Fairfield, Ala. T2 .....175  
 Houston S5 .....180  
 Jacksonville, Fla. M8 .....177  
 Johnstown, Pa. B2 .....175  
 Joliet, Ill. A7 .....175  
 Kansas City, Mo. S5 .....180  
 Kokomo, Ind. C16 .....177  
 Minneapolis, Colo. C10 .....180  
 Pittsburgh, Calif. C11 .....194  
 Rankin, Pa. A7 .....175  
 S. Chicago, Ill. R2 .....175  
 Sparrows Pt., Md. B2 .....177  
 Sterling, Ill. (7) N15 .....175  
 Worcester, Mass. A7 .....181

**TIE WIRE, Automatic Baler**  
 (14½ Ga.) (per 97 lb Net Box)  
 Coil No. 3150  
 Alabama City, Ala. R2 .....\$10.26  
 Atlanta A11 .....10.36  
 Bartonville, Ill. K4 .....10.36  
 Buffalo W12 .....10.26  
 Chicago W13 .....10.26  
 Crawfordville, Ind. M8 .....10.36  
 Donora, Pa. A7 .....10.26  
 Duluth A7 .....10.26  
 Fairfield, Ala. T2 .....10.26  
 Houston S5 .....10.51  
 Jacksonville, Fla. M8 .....10.36  
 Johnstown, Pa. B2 .....10.26  
 Joliet, Ill. A7 .....10.26  
 Kansas City, Mo. S5 .....10.51  
 Kokomo, Ind. C16 .....10.36  
 Los Angeles B3 .....10.36  
 Minneapolis, Colo. C10 .....10.51  
 Pittsburgh, Calif. C11 .....11.04  
 S. Chicago, Ill. R2 .....10.26  
 S. San Francisco C10 .....11.04  
 Sparrows Pt., Md. B2 .....10.36  
 Sterling, Ill. (37) N15 .....10.36

Coil No. 6500 Stand.  
 Alabama City, Ala. R2 .....\$10.60  
 Atlanta A11 .....10.70  
 Bartonville, Ill. K4 .....10.70  
 Buffalo W12 .....10.60  
 Chicago W13 .....10.60  
 Crawfordville, Ind. M8 .....10.70  
 Donora, Pa. A7 .....10.60  
 Duluth A7 .....10.60

Fairfield, Ala. T2 .....10.60  
 Houston S5 .....10.85  
 Jacksonville, Fla. M8 .....10.70  
 Johnstown, Pa. B2 .....10.60  
 Joliet, Ill. A7 .....10.60  
 Kansas City, Mo. S5 .....10.85  
 Kokomo, Ind. C16 .....10.70  
 Los Angeles B3 .....11.40  
 Minneapolis, Colo. C10 .....10.85  
 Pittsburgh, Calif. C11 .....11.40  
 S. Chicago, Ill. R2 .....10.60  
 S. San Francisco C10 .....11.40  
 Sparrows Pt., Md. B2 .....10.70  
 Sterling, Ill. (37) N15 .....10.70

Coil No. 6500 Interim  
 Alabama City, Ala. R2 .....\$10.65  
 Atlanta A11 .....10.75  
 Bartonville, Ill. K4 .....10.75  
 Buffalo W12 .....10.65  
 Chicago W13 .....10.65  
 Crawfordville, Ind. M8 .....10.75  
 Donora, Pa. A7 .....10.65  
 Duluth A7 .....10.65  
 Fairfield, Ala. T2 .....10.65  
 Houston S5 .....10.90  
 Jacksonville, Fla. M8 .....10.75  
 Johnstown, Pa. B2 .....10.65  
 Joliet, Ill. A7 .....10.65  
 Kansas City, Mo. S5 .....10.90  
 Kokomo, Ind. C16 .....10.75  
 Los Angeles B3 .....11.45  
 Minneapolis, Colo. C10 .....10.90  
 Pittsburgh, Calif. C11 .....11.45  
 S. Chicago, Ill. R2 .....10.65  
 S. San Francisco C10 .....11.45  
 Sparrows Pt., Md. B2 .....10.75  
 Sterling, Ill. (37) N15 .....10.75

**BALE TIES, Single Loop** Col.  
 Alabama City, Ala. R2 .....212  
 Atlanta A11 .....214  
 Bartonville, Ill. K4 .....214  
 Crawfordville, Ind. M8 .....214  
 Donora, Pa. A7 .....212  
 Duluth A7 .....212  
 Fairfield, Ala. T2 .....212  
 Houston S5 .....217  
 Jacksonville, Fla. M8 .....214  
 Joliet, Ill. A7 .....212  
 Kansas City, Mo. S5 .....212  
 Kokomo, Ind. C16 .....214  
 Minneapolis, Colo. C10 .....217  
 Pittsburgh, Calif. C11 .....236  
 S. San Francisco C10 .....236  
 Sparrows Pt., Md. B2 .....214  
 Sterling, Ill. (7) N15 .....214

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 Birmingham C15 .....172  
 Chicago Hts., Ill. C2, I-2 .....172  
 Duluth A7 .....172  
 Franklin, Pa. F5 .....172  
 Huntington, W. Va. C15 .....172  
 Johnstown, Pa. B2 .....172  
 Marion, O. P11 .....172  
 Minneapolis, Colo. C10 .....177  
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**WIRE, Barbed** Col.  
 Alabama City, Ala. R2 .....193\*\*  
 Aliquippa, Pa. J5 .....190\*  
 Atlanta A11 .....198\*  
 Bartonville, Ill. K4 .....198  
 Crawfordville, Ind. M8 .....198  
 Donora, Pa. A7 .....193†  
 Duluth A7 .....193†  
 Fairfield, Ala. T2 .....193†  
 Houston S5 .....198\*\*  
 Jacksonville, Fla. M8 .....198  
 Johnstown, Pa. B2 .....196†  
 Joliet, Ill. A7 .....193†  
 Kansas City, Mo. S5 .....198\*\*  
 Kokomo, Ind. C16 .....195†  
 Minneapolis, Colo. C10 .....198\*\*  
 Monessen, Pa. P7 .....196†  
 Pittsburgh, Calif. C11 .....213†  
 Rankin, Pa. A7 .....193†  
 S. Chicago, Ill. R2 .....193\*\*  
 S. San Francisco C10 .....213\*  
 Sparrows Pt., Md. B2 .....198†  
 Sterling, Ill. (7) N15 .....198††

**WOVEN FENCE, 9-15 Ga.** Col.  
 Ala. City, Ala. R2 .....187\*\*  
 Aliquippa, Pa. 9-14½ ga. J5 .....190\*  
 Atlanta A11 .....192\*  
 Bartonville, Ill. K4 .....192  
 Crawfordville, Ind. M8 .....192  
 Donora, Pa. A7 .....187†  
 Duluth A7 .....187†  
 Fairfield, Ala. T2 .....187†  
 Houston S5 .....192\*\*  
 Jacksonville, Fla. M8 .....192  
 Johnstown, Pa. (43) B2 .....190\*  
 Joliet, Ill. A7 .....187†  
 Kansas City, Mo. S5 .....192\*\*  
 Kokomo, Ind. C16 .....189†  
 Minneapolis, Colo. C10 .....192\*\*  
 Pittsburgh, Calif. C11 .....210†  
 Rankin, Pa. A7 .....187†  
 S. Chicago, Ill. R2 .....187\*\*  
 Sterling, Ill. (7) N15 .....192††

An'd Galv.  
 WIRE (16 gage) Stone  
 Ala. City, Ala. R2 .....17.15  
 Aliquippa, Pa. J5 .....17.15  
 Bartonville K4 .....17.25  
 Cleveland A7 .....17.15

Crawfordville M8 .....17.25  
 Fostoria, O. S1 .....17.65  
 Houston S5 .....17.40  
 Jacksonville M8 .....17.25  
 Johnstown B2 .....17.15  
 Kan. City, Mo. S5 .....17.40  
 Kokomo C16 .....17.25  
 Minneapolis C10 .....17.40  
 Pitts., Mass. W12 .....17.45  
 Pitts., Calif. C11 .....17.50  
 Sparrows Pt. B2 .....17.25  
 Sterling (37) N15 .....17.25  
 Waukegan A7 .....17.15  
 Worcester A7 .....17.45

**WIRE, Merchant Quality**  
 (6 to 8 gage) An'd Galv.  
 Ala. City, Ala. R2 .....8.65  
 Aliquippa J5 .....8.65  
 Atlanta (48) A11 .....8.75  
 Bartonville (48) K4 .....8.75  
 Buffalo W12 .....8.65  
 Cleveland A7 .....8.65  
 Crawfordville M8 .....8.75  
 Donora, Pa. A7 .....8.65  
 Duluth A7 .....8.65  
 Fairfield T2 .....8.65  
 Houston (48) S5 .....8.90  
 Jacksonville, Fla. M8 .....8.75  
 Johnstown B2 (48) .....8.65  
 Joliet, Ill. A7 .....8.65  
 Kan. City (48) S5 .....8.90  
 Kokomo C16 .....8.75  
 Los Angeles B3 .....9.60  
 Minneapolis C10 .....8.90  
 Monessen P7 (48) .....8.65  
 Palmer, Mass. W12 .....8.95  
 Pitts., Calif. C11 .....9.60  
 Rankin, Pa. A7 .....8.65  
 S. Chicago R2 .....8.65  
 S. San Fran. C10 .....9.60  
 Sparrows Pt. B2 (48) .....8.75  
 Sterling (48) N15 .....8.90  
 Sterling (1) (48) .....8.90  
 Struthers, O. Y1 .....8.65  
 Worcester, Mass. A7 .....8.95

Based on zinc price of  
 \*13.50, †5c, ‡10c. †Less  
 than 10c. ‡10.50c. \*Subject  
 to zinc equalization extras.

**FASTENERS**  
 (Base discounts, full con-  
 tainer quantity, per cent off  
 list, f.o.b. mill)

**BOLTS**  
**Carriage, Machine Bolts**  
 Full Size Body (cut thread)  
 ½ in. and smaller:  
 6 in. and shorter ..... 49.0  
 Longer than 6 in. .... 39.0  
 ½ in. thru 1 in.:  
 6 in. and shorter ..... 39.0  
 Longer than 6 in. .... 35.0  
 1½ in. and larger:  
 All lengths ..... 35.0  
 Undersized Body (rolled  
 thread)  
 ½ in. and smaller:  
 6 in. and shorter ..... 49.0  
**Carriage, Machine, Lag Bolts**  
 Hot Galvanized:  
 ½ in. and smaller:  
 6 in. and shorter ..... 29.0  
 Longer than 6 in. .... 15.0  
 ½ in. and larger:  
 All lengths ..... 12.0  
**Lag Bolts** (all diam.)  
 6 in. and shorter ..... 49.0  
 Longer than 6 in. .... 39.0  
**Plow and Tap Bolts**  
 ½ in. and smaller by  
 6 in. and shorter ..... 49.0  
 Larger than ½ in. or  
 longer than 6 in. .... 39.0  
**Blank Bolts** ..... 39.0  
**Step, Elevator, Tire Bolts** ..... 49.0  
**Stove Bolts, Slotted:**  
 ½ to ¾ in. incl. .... 55.0  
 ¾ to 1 in. incl., inclu-  
 sive ..... 55.0

**NUTS**  
**Reg. & Heavy Square Nuts:**  
 All sizes ..... 55.5  
**Square Nuts, Reg. &  
 Heavy, Hot Galvanized:**  
 All sizes ..... 41.0  
**Hex Nuts, Reg. &  
 Heavy, Hot Pressed:**  
 ½ in. and smaller ..... 60.5  
 ¾ in. to 1 in., incl. .... 55.5  
 1½ in. to 1½ in., incl. .... 53.5  
**Hex Nuts, Reg. &  
 Heavy, Cold Punched:**  
 ½ in. and smaller ..... 60.5  
 ¾ in. to 1½ in., incl. .... 55.5  
 1½ in. and larger ..... 53.5  
**Hex Nuts, All Types,  
 Hot Galvanized:**  
 ½ in. and smaller ..... 46.5  
 ¾ in. to 1 in., incl. .... 41.5  
 1½ in. to 1½ in., incl. .... 46.5

**Hex Nuts, Semifinished,**  
**Heavy (Incl. Slotted):**  
 ¾ in. and smaller ..... 60.5  
 ¾ in. to 1½ in., incl. .... 55.5  
 1½ in. and larger ..... 53.5  
**Hex Nuts, Finished (Incl.  
 Slotted and Castellated):**  
 1 in. and smaller ..... 63.0  
 1½ in. to 1½ in., incl. .... 59.0  
 1½ in. and larger ..... 53.5  
**Semifinished Hex Nuts, Reg.  
 (Incl. Slotted):**  
 ¾ in. and smaller ..... 60.5  
 ¾ in. to 1 in., incl. .... 63.0  
 1½ to 1½ in., incl. .... 59.0  
 1½ in. and larger ..... 53.5

**CAP AND SETSCREWS**  
 (Base discounts, packages,  
 per cent off list, f.o.b. mill)

**Hex Head Capscrews,  
 Coarse or Fine Thread,  
 Bright:**  
 6 in. and shorter:  
 ¾ in. and smaller ..... 40.0  
 ¾, ¾, and 1 in. .... 22.0  
 diam. .... 22.0

**PRESTRESSED STRAND**  
 (High strength, stress relieved; 7 wire uncoated. Net prices  
 per 1000 ft, 40,000 lb and over)

	Strand Diameter, Inches				
	1/4	5/16	3/8	7/16	1/2
Alton, Ill. L1	\$32.15	\$48.20	\$61.55	\$81.10	\$105.65
Buffalo W12	32.15	48.20	61.55	81.10	105.65
Cleveland A7	32.15	48.20	61.55	81.10	105.65
Kansas City, Mo. U3	32.15	48.20	61.55	81.10	105.65
Monessen, Pa. P6	32.15	48.20	61.55	81.10	105.65
New Haven, Conn. A7	32.15	48.20	61.55	81.10	105.65
Pittsburgh, Calif. C11	32.15	48.20	61.55	81.10	105.65
Pueblo, Colo. W12	32.15	48.20	61.55	81.10	105.65
Roebing, N.J. R5	32.15	48.20	61.55	81.10	105.65
St. Louis L8	32.15	48.20	61.55	81.10	105.65
Waukegan, Ill. A7	32.15	48.20	61.55	81.10	105.65

**RAILWAY MATERIALS**

	Standard		All		Tee Rails	
	No. 1	No. 2	No. 2	No. 2	60-lb	Under
Bessemer, Pa. U5	5.525	5.425	5.425	5.425	6.50	6.50
Ensley, Ala. T2	5.525	5.425	5.425	5.425	6.50	6.50
Fairfield, Ala. T2	5.525	5.425	5.425	5.425	6.50	6.50
Gary, Ind. U5	5.525	5.425	5.425	5.425	6.50	6.50
Huntington, W. Va. C15	5.525	5.425	5.425	5.425	6.50	6.50
Indiana Harbor, Ind. I-2	5.525	5.425	5.425	5.425	6.50	6.50
Johnstown, Pa. B2	5.525	5.425	5.425	5.425	6.50	6.50
Lackawanna, N.Y. B2	5.525	5.425	5.425	5.425	6.50	6.50
Minnequa, Colo. C10	5.525	5.425	5.425	5.425	6.50	6.50
Steelton, Pa. B2	5.525	5.425	5.425	5.425	6.50	6.50
Williamsport, Pa. S19	5.525	5.425	5.425	5.425	6.50	6.50

**TIE PLATES**  
 Fairfield, Ala. T2 .....6.60  
 Gary, Ind. U5 .....6.60  
 Ind. Harbor, Ind. I-2 .....6.60  
 Lackawanna, N.Y. B2 .....6.60  
 Minnequa, Colo. C10 .....6.60  
 Seattle B3 .....6.75  
 Steelton, Pa. B2 .....6.60  
 Torrance, Calif. C11 .....6.75

**JOINT BARS**  
 Bessemer, Pa. U5 .....6.975  
 Fairfield, Ala. T2 .....6.975  
 Ind. Harbor, Ind. I-2 .....6.975  
 Joliet, Ill. U5 .....6.975  
 Lackawanna, N.Y. B2 .....6.975  
 Minnequa, Colo. C10 .....6.975  
 Steelton, Pa. B2 .....6.975

**AXLES**  
 Ind. Harbor, Ind. S13 .....9.125  
 Johnstown, Pa. B2 .....8.775

**Footnotes**  
 (1) Chicago base.  
 (2) Angles, flats, bands.  
 (3) Merchant.  
 (4) Reinforcing.  
 (5) 1½ to under 1 7/16 in.:  
 1 7/16 to under 1 5/8 in.,  
 6.70c; 1 5/8 to 8 in.,  
 inclusive, 7.05c.  
 (6) Chicago or Birm. Base.  
 (7) Chicago base 2 cols. lower.  
 (8) 16 Ga. and heavier.  
 (9) Merchant quality; add 0.35c  
 for special quality.  
 (10) Pittsburgh base.  
 (11) Cleveland & Pitts. base.  
 (12) Worcester, Mass. base.  
 (13) Add 0.25c for 17 Ga. &  
 heavier.  
 (14) Gage 0.143 to 0.249 in.;  
 for gage 0.142 and lighter,  
 5.80c.  
 (15) ¾" and thinner.  
 (16) 40 lb and under.  
 (17) Flats only; 0.25 in. &  
 heavier.  
 (18) To dealers.  
 (19) Chicago & Pitts. base.  
 (20) New Haven, Conn. base.  
 (21) Delid. San Francisco Bay  
 area.  
 (22) Special quality.  
 (23) Deduct 0.15c, finer than  
 16 Ga.

Longer than 6 in.:  
 ¾ in. and smaller ..... 8.0  
 ¾, ¾, and 1 in. .... 6.0  
 diam. .... 6.0  
**High Carbon, Heat Treated:**  
 6 in. and shorter:  
 ¾ in. and smaller ..... 26.0  
 ¾, ¾, and 1 in. .... 3.0  
 diam. .... 3.0  
 Longer than 6 in.:  
 ¾ in. and smaller ..... 13.0  
 ¾, ¾, and 1 in. .... 32.0  
 diam. .... 32.0  
**Flat Head Capscrews:**  
 ¾ in. and smaller ..... +76.0  
**Set Screws, Square Head,  
 Cup Point, Coarse Thread:**  
 Through 1 in. diam.:  
 6 in. and shorter ..... Net  
 Longer than 6 in. ... +23

**RIVETS**  
 F.o.b. Cleveland and/or  
 freight equalized with Pitts-  
 burgh, f.o.b. Chicago and/or  
 freight equalized with Bir-  
 mingham except where equal-  
 ization is too great.  
 Structural ½ in., larger 12.25  
 ¾ in. under: List less 1.9%

**PRESTRESSED STRAND**  
 (High strength, stress relieved; 7 wire uncoated. Net prices  
 per 1000 ft, 40,000 lb and over)

	Strand Diameter, Inches				
	1/4	5/16	3/8	7/16	1/2
Alton, Ill. L1	\$32.15	\$48.20	\$61.55	\$81.10	\$105.65
Buffalo W12	32.15	48.20	61.55	81.10	105.65
Cleveland A7	32.15	48.20	61.55	81.10	105.65
Kansas City, Mo. U3	32.15	48.20	61.55	81.10	105.65
Monessen, Pa. P6	32.15	48.20	61.55	81.10	105.65
New Haven, Conn. A7	32.15	48.20	61.55	81.10	105.65
Pittsburgh, Calif. C11	32.15	48.20	61.55	81.10	105.65
Pueblo, Colo. W12	32.15	48.20	61.55	81.10	105.65
Roebing, N.J. R5	32.15	48.20	61.55	81.10	105.65
St. Louis L8	32.15	48.20	61.55	81.10	105.65
Waukegan, Ill. A7	32.15	48.20	61.55	81.10	105.65

**TRACK BOLTS, Untreated**  
 Cleveland R2 .....14.75  
 Kansas City, Mo. S5 .....14.75  
 Lebanon, Pa. B2 .....14.75  
 Minnequa, Colo. C10 .....14.75  
 Pittsburgh P14 .....14.75  
 Seattle B3 .....15.25

**SCREW SPIKES**  
 Lebanon, Pa. B2 .....14.50

**STANDARD TRACK SPIKES**  
 Fairfield, Ala. T2 .....9.75  
 Ind. Harbor, Ind. I-2, Y1 .....10.10  
 Kansas City, Mo. S5 .....10.10  
 Lebanon, Pa. B2 .....9.75  
 Minnequa, Colo. C10 .....9.75  
 Pittsburgh J5 .....10.10  
 Seattle B3 .....10.25  
 S. Chicago, Ill. R2 .....10.10  
 Struthers, O. Y1 .....10.10  
 Youngstown R2 .....10.10

(25) Bar mill bands.  
 (27) Bar mill sizes.  
 (28) Dunderized.  
 (29) Youngstown base.  
 (30) Shaved; for universal mill  
 add 0.45c.  
 (31) Widths over ¾ in.; 7.60c.  
 for widths ¾ in. and under  
 by 0.125 in. and thinner.  
 (32) Buffalo base.  
 (33) To jobs, deduct 20c.  
 (34) 9.60c for cut lengths.  
 (35) 72" and narrower.  
 (36) 54" and narrower.  
 (37) Chicago base, 10 points  
 lower.  
 (38) 14 Ga. & lighter; 48" &  
 narrower.  
 (39) 48" and narrower.  
 (40) Lighter than 0.035";  
 0.035" and heavier, 0.25c  
 higher.  
 (41) 9.10c for cut lengths.  
 (42) Mill lengths, f.o.b. mill;  
 deld. in mill zone or within  
 switching limits, 5.685c.  
 (43) 9-14½ Ga.  
 (44) To fabricators.  
 (45) 6-7 Ga.  
 (46) 3½ in. and smaller rounds;  
 9.55c, over 3½ in. and other  
 shapes.



SEAMLESS STANDARD PIPE, Threaded and Coupled												Carload discounts from list, %					
Size—Inches	2		2½		3		3½		4		5		6				
List Per Ft	37c		58.5c		76.5c		92c		\$1.09		\$1.48		\$1.92				
Pounds Per Ft	3.68		5.82		7.62		9.20		10.89		14.81		19.18				
	Blk	Galv*	Blk	Galv*	Blk	Galv*	Blk	Galv*	Blk	Galv*	Blk	Galv*	Blk	Galv*			
Aliquippa, Pa. J5	+12.25	+27.25	+5.75	+22.5	+3.25	+20	+1.75	+18.5	+1.75	+18.5	+2	+18.75	0.5	+16.25			
Ambridge, Pa. N2	+12.25		+5.75		+3.25		+1.75		+1.75		+2		0.5				
Lorain, O. N3	+12.25	+27.25	+5.75	+22.5	+3.25	+20	+1.75	+18.5	+1.75	+18.5	+2	+18.75	0.5	+16.25			
Youngstown Y1	+12.25	+27.25	+5.75	+22.5	+3.25	+20	+1.75	+18.5	+1.75	+18.5	+2	+18.75	0.5	+16.25			

ELECTRIC STANDARD PIPE, Threaded and Coupled												Carload discounts from list, %								
Youngstown	R2																			
					</															

BUTTWELD STANDARD PIPE, Threaded and Coupled							Carload discounts from list, %						
Size—Inches	1½		2		2½		3		3½		4		
List Per Ft	5.5c		6c		6½c		8.5c		11.5c		17c		
Pounds Per Ft	0.24		0.42		0.57		0.85		1.13		1.68		
	Blk	Galv*	Blk	Galv*	Blk	Galv*	Blk	Galv*	Blk	Galv*	Blk	Galv*	
Aliquippa, Pa. J5							2.25	+13	5.25	+9	8.75	+4.5	
Alton, Ill. L1							3.25	+12	6.25	+8	9.75	+3.5	
Benwood, W. Va. W10	1.5	+25	+10.5	+34	+21	+42.5	2.25	+13	5.25	+9	8.75	+4.5	
Butler, Pa. F6	5.5	+21	+6.5	+30	+17	+38.5							
Etna, Pa. N2							5.25	+10	8.25	+6	11.75	+1.5	
Fairless, Pa. N3							0.25	+15	3.25	+11	6.75	+6.5	
Fontana, Calif. K1							+8.25	+23.5	+5.25	+19.5	+1.75	+15	
Indiana Harbor, Ind. Y1							1.25	+14	4.25	+10	7.75	+3.5	
Lorain, O. N3							3.25	+13	5.25	+9	8.75	+4.5	
Sharon, Pa. S4	5.5	+21	+6.5	+30	-17	+38.5							
Sharon, Pa. M6							5.25	+10	8.25	+6	11.75	+1.5	
Sparrows Pt., Md. B2	0.5	+26	+11.5	+35	+22	+43.5	0.25	+15	3.25	+11	6.75	+6.5	
Wheatland, Pa. W9	5.5	+21	+6	+30	+17	+38.5	5.25	+10	8.25	+6	11.75	+1.5	
Youngstown R2, Y1							3.75	+13	5.25	+9	8.75	+4.5	

Size—Inches	1½		2		2½		3		3½		4	
List Per Ft	27.5c		37c		58.5c		76.5c		92c		\$1.09	
Pounds Per Ft	2.73		3.68		5.82		7.62		9.20		10.89	
	Blk	Galv*	Blk	Galv*	Blk	Galv*	Blk	Galv*	Blk	Galv*	Blk	Galv*
Aliquippa, Pa. J5	11.75	+2.75	12.25	+2.25	13.75	+2.5	13.75	+2.5	13.75	+2.5	13.75	+2.5
Alton, Ill. L1	12.75	+1.75	13.25	+1.25	14.75	+1.5	14.75	+1.5	14.75	+1.5	14.75	+1.5
Benwood, W. Va. W10	11.75	+2.75	12.25	+2.25	13.75	+2.5	13.75	+2.5	13.75	+2.5	13.75	+2.5
Etna, Pa. N2	14.75	0.25	15.25	0.75	16.75	0.5	16.75	0.5	16.75	0.5	16.75	0.5
Fairless, Pa. N3	9.75	+4.75	10.25	+4.25	11.75	+4.5	11.75	+4.5	11.75	+4.5	11.75	+4.5
Fontana, Calif. K1	1.25	+13.25	1.75	+12.75	3.25	+13	3.25	+13	3.25	+13	3.25	+13
Indiana Harbor, Ind. Y1	10.75	+3.75	11.25	+3.25	12.75	+3.5	12.75	+3.5	12.75	+3.5	12.75	+3.5
Lorain, O. N3	11.75	+2.75	12.25	+2.25	13.75	+2.5	13.75	+2.5	13.75	+2.5	13.75	+2.5
Sharon, Pa. M6	14.75	0.25	15.25	0.75	16.75	0.5	16.75	0.5	16.75	0.5	16.75	0.5
Sparrows Pt., Md. B2	9.75	+4.75	10.25	+4.25	11.75	+4.5	11.75	+4.5	11.75	+4.5	11.75	+4.5
Wheatland, Pa. W9	14.75	0.25	15.25	0.75	16.75	0.5	16.75	0.5	16.75	0.5	16.75	0.5
Youngstown R2, Y1	11.75	+2.75	12.25	+2.25	13.75	+2.5	13.75	+2.5	13.75	+2.5	13.75	+2.5

\*Galvanized pipe discounts based on current price of zinc (10.00c, East St. Louis).

## Stainless Steel

Representative prices, cents per pound; subject to current lists of extras

AISI Type	—Rerolling— Ingot	Slabs	Forg- ing Billets	H.R. Strip	H.R. Rods; C.F. Wire	Bars; Struc- tural Shapes	Plates	Sheets	C.R. Strip; Flat Wire
201	22.00	27.00	36.00	36.00	40.00	42.00	44.25	48.50	45.00
202	23.75	30.25	36.50	39.00	40.75	43.00	45.00	49.25	49.25
301	23.25	28.00	37.25	37.25	42.00	44.25	46.25	51.25	47.50
302	25.25	31.50	38.00	40.50	42.75	45.00	47.25	52.00	52.00
302B	25.50	32.75	40.75	45.75	45.00	47.25	49.50	57.00	57.00
303	32.00	41.00	48.00	48.00	45.50	48.00	50.00	56.75	56.75
304	27.00	33.25	40.50	44.25	45.25	47.75	50.75	55.00	55.00
304L	28.50	36.75	42.50	47.50	45.25	47.75	51.25	58.75	58.75
305	30.75	38.25	47.25	50.25	52.75	55.75	60.25	63.00	63.00
308	39.75	49.50	57.75	64.50	63.75	67.00	71.00	80.50	80.50
309	49.75	61.50	78.00	84.25	86.50	91.00	92.75	96.75	96.75
310	49.75	61.50	78.00	84.25	86.50	91.00	92.75	99.00	104.25
314	39.75	49.50	62.25	69.25	69.25	73.00	76.75	80.75	80.75
316	48.00	60.00	76.75	88.25	86.25	90.75	93.50	101.00	101.00
316L	32.25	40.00	47.00	53.50	52.50	55.50	59.75	65.50	65.50
330	37.00	46.50	55.75	63.50	61.50	64.75	69.75	79.25	79.25
18-8 CbTa	37.00	46.50	55.75	63.50	61.50	64.75	69.75	79.25	79.25
403	19.50	25.50	29.75	36.00	33.50	35.25	37.50	46.75	46.75
405	16.75	21.50	28.25	31.00	32.00	33.75	35.00	40.25	40.25
410	26.00	33.50	34.25	41.75	39.25	41.25	45.25	52.00	62.00
420	17.00	21.75	28.75	32.00	32.50	34.25	36.00	40.75	40.75
430F	28.75	37.75	42.00	44.25	44.25	46.00	56.00	56.00	56.00
431	39.25	59.00	44.25	46.50	47.75	70.00	70.00	70.00	70.00

**Stainless Steel Producers Are:** Allegheny Ludlum Steel Corp.; American Steel & Wire Div., U. S. Steel Corp.; Anchor Drawn Steel Co., division of Vanadium-Alloys Steel Co.; Armco Steel Corp.; Babcock & Wilcox Co.; Bethlehem Steel Co.; J. Bishop & Co.; A. M. Byers Co.; G. O. Carlson Inc.; Carpenter Steel Co.; Carpenter Steel Co. of New England; Charter Wire Products; Crucible Steel Co. of America; Damascus Tube Co.; Dearborn Div., Sharon Steel Corp.; Wilbur B. Driver Co.; Driver-Harris Co.; Eastern Stainless Steel Corp.; Firth Sterling Inc.; Fort Wayne Metals Inc.; Green River Steel Corp., subsidiary of Jessop Steel Co.; Indiana Steel & Wire Co.; Ingersoll Steel Div., Borg-Warner Corp.; Ellwood Ivins Steel Tube Works Inc.; Jessop Steel Co.; Johnson Steel & Wire Co. Inc.; Stainless Steel Div., Jones & Laughlin Steel Corp.; Joslyn Stainless Steels, division of Joslyn Mfg. & Supply Co.; Latrobe Steel Co.; Lukens Steel Co.; Maryland Fine & Specialty Wire Co. Inc.; McLouth Steel Corp.; Metal Forming Corp.; Midvale-Heppenstall Co.; National Standard Co.; National Tube Div., U. S. Steel Corp.; Pacific Tube Co.; Page Steel & Wire Div., American Chain & Cable Co. Inc.; Pittsburgh Rolling Mills Inc.; Republic Steel Corp.; Riverside-Alloy Metal Div., H. K. Porter Company Inc.; Rodney Metals Inc.; Sawhill Tubular Products Inc.; Sharon Steel Corp.; Simonds Saw & Steel Co.; Specialty Wire Co. Inc.; Standard Tube Co.; Superior Steel Div., Copperweld Steel Co.; Superior Tube Co.; Swepco Tube Corp.; Techalloy Co. Inc.; Timken Roller Bearing Co.; Trent Tube Co., subsidiary of Crucible Steel Co. of America; Tube Methods Inc.; Ulbrich Stainless Steels Inc.; U. S. Steel Corp.; Universal-Cyclops Steel Corp.; Vanadium-Alloys Steel Co.; Wall Tube & Metal Products Co.; Wallingford Steel Co., subsidiary of Allegheny Ludlum Steel Corp.; Washington Steel Corp.

## Clad Steel

Stainless	Plates			Sheets Carbon Base 20%
	5%	Carbon Base 10%	15%	
302	34.70	37.95	42.25	37.50
304	36.90	40.55	45.10	39.75
304L	40.35	44.50	49.50	58.25
316	45.05	49.35	54.70	60.10
316L	47.30	53.80	61.45	69.10
321	36.60	40.05	44.60	49.30
347	38.25	42.40	47.55	52.80
405	28.60	29.85	33.35	36.85
410	28.15	29.55	33.10	36.70
430	28.30	29.80	33.55	37.25
Inconel	48.00	59.65	70.15	80.85
Nickel	41.65	51.95	62.30	72.70
Nickel, Low Carbon	41.95	52.60	63.30	74.15
Monel	43.35	53.55	63.80	74.05
Copper*	33.10	38.75		

\*Deoxidized. Production points: Stainless-clad sheets, New Castle, Ind. I-4; stainless-clad plates, Claymont, Del. C22, Coatesville, Pa. L7, New Castle, Ind. I-4, and Washington, Pa. J3; nickel, inconel, monel-clad plates, Coatesville L7; copper-clad strip, Carnegie, Pa. S18.

## Tool Steel

Grade	\$ per lb	Grade	\$ per lb
Regular Carbon	0.330	Cr-Hot Work	0.505
Extra Carbon	0.385	W-Cr Hot Work	0.530
Special Carbon	0.505	V-Cr Hot Work	0.550
Oil Hardening	0.505	Hi-Carbon-Cr	0.955

W	Cr	V	Mo	\$ per lb
20.25	4.25	1.6	12.25	4.330
18.25	4.25	1	4.75	2.545
18	4	2	9	2.915
18	4	2		2.005
18	4	1		1.840
9	3.5			1.425
13.5	4	3		2.105
13.75	3.75	2	5	2.485
6.4	4.5	1.9		1.345
6	4	3	6	1.590
1.5	4	1	8.5	1.200

Tool steel producers include: A4, A8, B2, B8, C4, C9, C13, C18, F2, J3, L3, M14, S8, U4, V2, and V3.



# Pig Iron

F.o.b. furnace prices in dollars per gross ton, as reported to STEEL. Minimum delivered prices are approximate.

	Basic	No. 2 Foundry	Malleable	Bessemer		Basic	No. 2 Foundry	Malleable	Bessemer
<b>Birmingham District</b>					Duluth I-3	66.00	66.50	66.50	67.00
Birmingham R2	62.00	62.50†	66.50	67.00	Erie, Pa. I-3	66.00	66.50	66.50	67.00
Birmingham U6		62.50†	66.50	67.00	Everett, Mass. E1	67.50	68.00	68.50	69.00
Woodward, Ala. W15	62.00**	62.50†	66.50	67.00	Fontana, Calif. K1	75.00	75.50	76.00	76.50
Cincinnati, deld.		70.20	70.20	70.20	Geneva, Utah C11	66.00	66.50	66.50	67.00
<b>Buffalo District</b>					Granite City, Ill. G4	67.90	68.40	68.90	69.40
Buffalo H1, R2	66.00	66.50	67.00	67.50	Ironton, Utah C11	66.00	66.50	66.50	67.00
N. Tonawanda, N.Y. T9		66.50	67.00	67.50	Minnequa, Colo. C10	68.00	68.50	69.00	69.50
Tonawanda, N.Y. W12	66.00	66.50	67.00	67.50	Rockwood, Tenn. T3		62.50†	66.50	67.00
Boston, deld.	77.29	77.79	78.29	78.79	Toledo, Ohio I-3	66.00	66.50	66.50	67.00
Rochester, N.Y., deld.	69.02	69.52	70.02	70.52	Cincinnati, deld.	72.94	73.44	73.94	74.44
Syracuse, N.Y., deld.	70.12	70.62	71.12	71.62					
<b>Chicago District</b>					**Phos. 0.70-0.90%; Phos. 0.30-0.69%, \$63. †Phos. 0.70-0.90%; Phos. 0.30-0.69%, \$63.50.				
Chicago I-3	66.00	66.50	66.50	67.00	<b>PIG IRON DIFFERENTIALS</b>				
S. Chicago, Ill. W14	66.00	66.50	66.50	67.00	Silicon: Add 75 cents per ton for each 0.25% Si or percentage thereof over base grade, 1.75-2.25%, except on low phos. iron on which base is 1.75-2.00%.				
S. Chicago, Ill. W14	66.00	66.50	66.50	67.00	Manganese: Add 50 cents per ton for each 0.25% manganese over 1% or portion thereof.				
Milwaukee, deld.	69.02	69.52	70.02	70.52	<b>BLAST FURNACE SILVER PIG IRON, Gross Ton</b>				
Muskegon, Mich., deld.		74.52	74.52	75.02	(Base 6.00-6.50% silicon; add \$1 for each 0.50% silicon or portion thereof over the base grade within a range of 6.50 to 11.50%; starting with silicon over 11.50% and \$1.50 per ton for each 0.50% silicon or portion thereof up to 14%; add \$1 for each 0.50% Mn over 1%)				
<b>Cleveland District</b>					Jackson, Ohio I-3, J1				\$78.00
Cleveland R2, A7	66.00	66.50	66.50	67.00	Buffalo H1				79.25
Akron, Ohio, deld.	69.52	70.02	70.02	70.52	<b>ELECTRIC FURNACE SILVER PIG IRON, Gross Ton</b>				
<b>Mid-Atlantic District</b>					(Base 14.01-14.50% silicon; add \$1 for each 0.5% Si to 18%; \$1.25 for each 0.50% Mn over 1%; \$2 per gross ton premium for 0.045% max P)				
Birdsboro, Pa. B10	68.00	68.50	69.00	69.50	Calvert City, Ky. P15				\$99.00
Chester, Pa. P4	68.00	68.50	69.00	69.50	Niagara Falls, N.Y. P15				99.00
Swedeland, Pa. A3	68.00	68.50	69.00	69.50	Keokuk, Iowa Open-hearth & Fdry, \$9 freight allowed K2				103.50
New York, deld.		75.50	76.00	76.50	Keokuk, Iowa O.H. & Fdry, 12½ lb piglets, 16% Si, max frgt allowed up to \$9, K2				106.50
Newark, N.J., deld.	72.69	73.19	73.69	74.19	<b>LOW PHOSPHORUS PIG IRON, Gross Ton</b>				
Philadelphia, deld.	70.41	70.91	71.41	71.91	Lyles, Tenn. T3 (Phos. 0.035% max)				\$78.50
Troy, N.Y. R2	68.00	68.50	69.00	69.50	Rockwood, Tenn. T3 (Phos. 0.035% max)				78.50
<b>Pittsburgh District</b>					Troy, N.Y. R2 (Phos. 0.035% max)				74.00
Neville Island, Pa. P6	66.00	66.50	66.50	67.00	Philadelphia, deld.				82.67
Pittsburgh (N&S sides),					Cleveland A7 (Intermediate) (Phos. 0.036-0.075% max)				71.00
Altoona, Pa., deld.		67.95	67.95	68.48	Duluth I-3 (Intermediate) (Phos. 0.036-0.075% max)				71.00
McKees Rocks, Pa., deld.		67.60	67.60	68.13	Erie, Pa. I-3 (Intermediate) (Phos. 0.036-0.075% max)				71.00
Lawrenceville, Homestead,					Neville Island, Pa. P6 (Intermediate) (Phos. 0.036-0.075% max)				71.00
Wilmerding, Monaca, Pa., deld.		68.28	68.28	68.79					
Verona, Trafford, Pa., deld.	68.29	68.82	68.82	69.35					
Brackenridge, Pa., deld.	68.60	69.10	69.10	69.63					
Midland, Pa. C18	66.00								
<b>Youngstown District</b>									
Hubbard, Ohio Y1			66.50	67.00					
Sharpsville, Pa. S6	66.00		66.50	67.00					
Youngstown Y1			66.50	67.00					
Mansfield, Ohio, deld.	71.30		71.80	72.30					

# Steel Service Center Products

Representative prices, per pound, subject to extras, f.o.b. warehouse. City delivery charges are 15 cents per 100 lb except: Denver, Moline, Norfolk, Richmond, Washington, 20 cents; Baltimore, Boston, Los Angeles, New York, Philadelphia, Portland, Spokane, San Francisco, 10 cents; Atlanta, Birmingham, Chattanooga, Houston, Seattle, no charge.

	SHEETS				STRIP		BARS		Standard Structural Shapes	PLATES	
	Hot-Rolled	Cold-Rolled	Gal. 10 Ga.†	Stainless Type 302	Hot-Rolled*	H.R. Rounds	C.F. Rds.‡	H.R. Alloy 4140††§		Carbon	Floor
Atlanta	8.59§	9.86§	9.68	53.00	8.64	9.01	10.68	15.18	9.05	8.97	10.90
Baltimore	8.00	8.90	9.68	53.00	8.70	8.65	12.33 #	15.18	8.50	8.65	9.75
Birmingham	8.18	9.45	10.46	53.00	8.23	8.60	10.57	15.18	8.64	8.56	10.70
Boston	9.38	10.44	11.45	53.50	9.42	9.73	12.90 #	15.28	9.63	9.72	11.20
Buffalo	8.25	9.00	11.07	55.98	8.50	8.80	11.00 #	15.00	8.90	8.90	10.45
Chattanooga	8.35	9.69	9.65	53.00	8.40	8.77	10.46	15.18	8.88	8.80	10.66
Chicago	8.20	9.45	10.10	53.00	8.23	8.60	8.80	14.65	8.64	8.56	9.88
Cincinnati	8.34	9.48	10.10	52.43	8.54	8.92	11.06	14.86	9.18	8.93	10.21
Cleveland	8.18	9.45	10.20	52.33	8.33	8.69	10.80 #	14.74	9.01	8.79	10.11
Dallas	7.50	8.80		52.33	7.65	7.60	11.01	16.10	7.65	8.10	9.35
Denver	9.40	11.84	12.94	56.50	9.43	9.80	11.19	14.91	9.84	9.76	11.08
Detroit	8.43	9.70	10.45	56.50	8.58	8.90	9.15	14.91	9.18	8.91	10.13
Erie, Pa.	8.20	9.45	9.95†§	53.00	8.50	8.75	9.05†§	15.18	9.00	8.85	10.10
Houston	7.10	8.40	8.45	54.32	7.25	7.20	11.10	13.50	7.25	7.70	8.95
Jackson, Miss.	8.52	9.79		54.32	8.57	8.94	10.68	15.18	8.97	8.90	10.74
Los Angeles	8.25²	10.30²	11.90²	57.60	8.90	8.70²	12.10²	16.10	8.50²	8.65²	10.80²
Memphis, Tenn.	8.55	9.80		57.60	8.60	8.97	11.96 #	15.18	9.01	8.93	10.56
Milwaukee	8.33	9.58	10.23	57.60	8.36	8.73	9.03	14.78	8.85	8.69	10.01
Moline, Ill.	8.55	9.80	10.45	57.60	8.58	8.95	9.15	14.78	8.99	8.91	10.01
New York	8.87	10.13	10.56	53.08	9.31	9.57	12.76 #	15.09	9.35	9.43	10.66
Norfolk, Va.	8.40			53.08	9.10	9.10	12.00	15.09	9.40	8.85	10.35
Philadelphia	8.00	8.90	9.92	52.69	8.70	8.65	11.51 #	15.01	8.50	8.75	9.75**
Pittsburgh	8.18	9.45	10.45	52.00	8.33	8.60	10.80 #	14.65	8.64	8.56	9.88
Portland, Oreg.	8.50	11.20	11.55	57.38	9.55	8.65	14.50	15.95	8.65	8.30	11.50
Richmond, Va.	8.40		10.40	57.38	9.10	9.00			9.40	8.85	10.35
St. Louis	8.54	9.79	10.36	57.38	8.59	8.97	9.41	15.01	9.10	8.93	10.25
St. Paul	8.79	10.04	10.71	57.38	8.84	9.21	9.66	15.01	9.38	9.30	10.49
San Francisco	9.35	10.75	11.00	55.10	9.45†§	9.70	13.00	16.00	9.50	9.60	12.00
Seattle	9.95	11.15	12.20	57.38	10.00	10.10	14.05	16.35	9.80	9.70	12.10
South'ton, Conn.	9.07	10.33	10.71	57.38	9.48	9.74			9.57	9.57	10.91
Spokane	9.95	11.15	12.20	57.38	10.00	10.10	14.05	16.35	9.80	9.70	12.10
Washington	8.88			57.38	9.36	9.56	10.94		9.79	9.26	10.74

\*Prices do not include gage extras; †prices include gage and coating extras; ‡includes 35-cent bar quality extras; §42 in. and under; \*\*½ in. and heavier; ††as annealed; ‡‡¼ in. to 4 in. wide, inclusive; §1 in. round C-1018.

Base quantities, 2000 to 4999 lb except as noted; cold-rolled strip and cold-finished bars, 2000 lb and over except in Seattle, 2000 to 9999 lb; stainless sheets, 8000 lb except in Chicago, New York, Boston, Seattle, Portland, Oreg., 10,000 lb and in San Francisco, 2000 to 4999 lb; hot-rolled products on West Coast, 2000 to 9999 lb, except in Portland, Oreg., 1000 to 9999 lb; ²—1000 to 1999 lb; ‡—1000 to 1999 lb; ‡—2000 lb and over.



## Refractories

### Fire Clay Brick (per 1000)

**High-Heat Duty:** Ashland, Grahn, Hayward, Hitchins, Haldeman, Olive Hill, Ky., Athens, Troup, Tex., Beech Creek, Clearfield, Curwensville, Lock, Haven, Lumber, Orviston, West Decatur, Winburne, Snow Shoe, Pa., Bessemer, Ala., Farber, Mexico, St. Louis, Vandalia, Mo., Ironton, Oak Hill, Parrall, Portsmouth, Ohio, Ottawa, Ill., Stevens Pottery, Ga., \$135; Salina, Pa., \$140; Niles, Ohio, \$138; Cutler, Utah, \$165.  
**Super-Duty:** Ironton, Ohio, Vandalia, Mo., Olive Hill, Ky., Clearfield, Salina, Winburne, Snow Shoe, Pa., New Savage, Md., St. Louis, \$175; Stevens Pottery, Ga., \$185; Cutler, Utah, \$235.

### Silica Brick (per 1000)

**Standard:** Alexandria, Claysburg, Mt. Union, Sproul, Pa., Ensley, Ala., Ft. Matilda, Pa., Portsmouth, Ohio, Hawstone, Pa., \$150; Warren, Niles, Windham, Ohio, Hays, Latrobe, Morrisville, Pa., \$155; E. Chicago, Ind., Joliet, Rockdale, Ill., \$160; Lehigh, Utah, \$175; Los Angeles, \$180.  
**Super-Duty:** Sproul, Hawstone, Pa., Niles, Warren, Windham, Ohio, Leslie, Md., Athens, Tex., \$157; Morrisville, Hays, Latrobe, Pa., \$160; E. Chicago, Ind., \$167; Curtner, Calif., \$182.

### Semisilica Brick (per 1000)

Clearfield, Pa., \$140; Philadelphia, \$137; Woodbridge, N. J., \$135.

### Ladle Brick (per 1000)

**Dry Pressed:** Alsey, Ill., Chester, New Cumberland, W. Va., Freeport, Johnstown, Merrill Station, Vanport, Pa., Mexico, Vandalia, Mo., Wellsville, Ironton, New Salisbury, Ohio, \$96.75; Clearfield, Pa., Portsmouth, Ohio, \$102.

### High-Alumina Brick (per 1000)

50 Per Cent: St. Louis, Mexico, Vandalia, Mo., \$235; Danville, Ill., \$238; Philadelphia, Clear-

field, Pa., \$230; Orviston, Snow Shoe, Pa., \$245.  
 60 Per Cent: St. Louis, Mexico, Vandalia, Mo., \$295; Danville, Ill., \$298; Clearfield, Orviston, Snow Shoe, Pa., \$305; Philadelphia, \$310.  
 70 Per Cent: St. Louis, Mexico, Vandalia, Mo., \$335; Danville, Ill., \$338; Clearfield, Orviston, Snow Shoe, Pa., \$345; Philadelphia, \$350.

### Sleeves (per 1000)

Reesdale, Johnstown, Bridgeburg, Pa., St. Louis, \$188.

### Nozzles (per 1000)

Reesdale, Johnstown, Bridgeburg, Pa., St. Louis, \$310.

### Runners (per 1000)

Reesdale, Johnstown, Bridgeburg, Pa., \$234.

### Dolomite (per net ton)

Domestic, dead-burned, bulk, Billmeyer, Blue Bell, Williams, Plymouth Meeting, York, Pa., Millville, W. Va., Bettsville, Millersville, Martin, Woodville, Gibsonburg, Narlo, Ohio, \$18.75; Thornton, McCook, Ill., \$17; Dolly Sid-ing, Bonne Terre, Mo., \$15.60.

### Magnesite (per net ton)

Domestic, dead-burned, 1/2 in. grains with fines: Whewelah, Wash., Luning, Nev., \$46; 3/4 in. grains with fines: Baltimore, \$73.

## Fluorspar

Metallurgical grades, f.o.b. shipping point in Ill., Ky., net tons, carloads, effective CaF<sub>2</sub> content 72.5%, \$37-\$41; 70%, \$36-\$40; 60%, \$33-\$36.50. Imported, net tons, f.o.b. cars point of entry, duty paid, metallurgical grade: European, \$29-\$31, contract; Mexican, all rail, duty paid, \$25; barge, Brownsville, Tex., \$26.

## Metal Powder

(Per pound f.o.b. shipping point in ton lots for minus 100 mesh, except as noted)

### Cents

Sponge Iron, Swedish: deld. east of Mississippi River, ocean bags 23,000 lb and over.. 10.50  
 F.o.b. Riverton or Camden, N. J., west of Mississippi River. 9.50

Sponge Iron, Domestic, 98 + % Fe: Deld. east of Mississippi River, 23,000 lb and over 10.50

Electrolytic Iron: Melting stock, 99.9% Fe, irregular fragments of 1/2 in. x 1.3 in. .... 28.00

Annealed, 99.5% Fe .. 36.50

Unannealed (99 + % Fe) ..... 36.00

Unannealed (99 + % Fe) (minus 325 mesh) ..... 59.00

Powder Flakes (minus 16, plus 100 mesh).. 29.00

Carbonyl Iron: 98.1-99.9%, 3 to 20 microns, depending on grade, 93.00-290.00 in standard 200-lb containers; all minus 200 mesh.

### Aluminum:

Atomized, 500-lb drum, freight allowed

Carlots ..... 39.50

Ton lots ..... 41.50

Antimony, 500-lb lots 42.00\*

Brass, 5000-lb lots ..... 31.00-46.70†

Bronze, 5000-lb lots ..... 47.20-51.50†

Copper:

Electrolytic ..... 14.75\*

Reduced ..... 14.75\*

Lead ..... 7.50\*

Manganese:

Minus 35 mesh .... 64.00

Minus 100 mesh .... 70.00

Minus 200 mesh .... 75.00

Nickel, unannealed .... 74.00

Nickel-Silver, 5000-lb lots ..... 48.80-53.50†

Phosphor-Copper, 5000-lb lots ..... 59.30

Copper (atomized) 5000-lb lots ..... 39.80-48.30†

Silicon ..... 47.50

Solder ..... 7.00\*

Stainless Steel, 304 .. \$1.07

Stainless Steel, 316 .. \$1.26

Tin ..... 14.50\*

Zinc, 5000-lb lots 17.50-30.70†

Tungsten: Dollars

Melting grade, 99% nominal; 14

1000 lb and over .. 3.15

Less than 1000 lb .... 3.30

Chromium, electrolytic 99.8% Cr min

metallic basis .... 5.00

\*Plus cost of metal. †Depending on composition. ‡Depending on mesh.

## Electrodes

Threaded with nipple; unboxed, f.o.b. plant

### GRAPHITE

—Inches—		Per 100 lb
Diam	Length	
2	24	\$60.75
2 1/2	30	39.25
3	40	37.00
4	40	35.00
5 1/4	40	34.75
6	60	31.50
7	60	28.25
8, 9, 10	60	28.00
12	72	26.75
14	60	26.75
16	72	25.75
17	60	26.25
18	72	26.25
20	72	25.25
24	84	26.00

### CARBON

8	60	13.30
10	60	13.00
12	60	12.95
14	60	12.85
14	72	11.95
17	60	11.85
17	72	11.40
20	84	11.40
20	90	11.00
24	72, 84	11.25
24	96	10.95
30	84	11.05
40, 35	110	10.70
40	100	10.70

## Ores

### Lake Superior Iron Ore

(Prices effective for the 1958 shipping season, gross ton, 51.50% iron natural, rail of vessel, lower lake ports.)

Mesabi bessemer ..... \$11.60  
 Mesabi nonbessemer ..... 11.45  
 Old Range bessemer ..... 11.85  
 Old Range nonbessemer ..... 11.70  
 Open-hearth lump ..... 12.70  
 High phos ..... 11.45

The foregoing prices are based on upper lake rail freight rates, lake vessel freight rates, handling and unloading charges, and taxes thereon, which were in effect Jan. 30, 1957, and increases or decreases after that date are absorbed by the seller.

### Eastern Local Iron Ore

Cents per unit, deld. E. Pa.  
 New Jersey, foundry and basic 62-64% concentrates ..... 18.00-19.00

### Foreign Iron Ore

Cents per unit, c.i.f. Atlantic ports  
 Swedish basic, 65% ..... 25.00  
 N. African hematite (spot) ..... nom.  
 Brazilian iron ore, 68.5% ..... 14.60

### Tungsten Ore

Net ton, unit  
 Foreign wolframite, good commercial quality ..... \$9.50-10.00  
 Domestic, concentrates f.o.b. milling points ..... 17.00-22.00

\*Before duty.

### Manganese Ore

Mn 46-48%, Indian (export tax included), \$1.15 per long ton unit, c.i.f. U S. ports, duty for buyer's account; other than Indian, nominal; contracts by negotiation.

### Chrome Ore

Gross ton, f.o.b. cars New York, Philadelphia, Baltimore, Charleston, S. C., plus ocean freight differential for delivery to Portland, Oreg., Tacoma, Wash.

### Indian and Rhodesian

48% 3:1 ..... \$46.00-48.00  
 48% 2.8:1 ..... 42.00-44.00  
 48% no ratio ..... 32.00-34.00

### South African Transvaal

48% no ratio ..... \$32.00-34.00  
 44% no ratio ..... 24.00-25.00

### Turkish

48% 3:1 ..... \$51.00-55.00

### Domestic

Rail nearest seller

18% 3:1 ..... 39.00

### Molybdenum

Sulfide concentrate, per lb of Mo content, mines, unpacked ..... \$1.23

### Antimony Ore

Per short ton unit of Sb content, c.i.f. seaboard  
 50-55% ..... \$2.25-2.40  
 60-65% ..... 2.50-3.10

### Vanadium Ore

Cents per lb V<sub>2</sub>O<sub>5</sub>  
 Domestic ..... 31.00

## Metallurgical Coke

### Price per net ton

### Beehive Ovens

Connellsville, Pa., furnace ..... \$14.75-15.75

Connellsville, Pa., foundry ..... 18.00-18.50

### Oven Foundry Coke

Birmingham, ovens ..... \$28.85

Cincinnati, deld. .... 31.84

Buffalo, ovens ..... 30.50

Camden, N. J., ovens ..... 29.50

Detroit, ovens ..... 30.50

Pontiac, Mich., deld. .... 32.45

Saginaw, Mich., deld. .... 34.03

Erie, Pa., ovens ..... 30.50

Everett, Mass., ovens: New England, deld. .... 31.55\*

Indianapolis, ovens ..... 29.75

Ironton, Ohio, ovens ..... 29.00

Cincinnati, deld. .... 31.84

Kearny, N. J., ovens ..... 29.75

Milwaukee, ovens ..... 30.50

Neville Island (Pittsburgh), Pa., ovens. 29.25

Painesville, Ohio, ovens ..... 30.50

Cleveland, deld. .... 32.69

Philadelphia, ovens ..... 29.50

St. Louis, ovens ..... 31.50

St. Paul, ovens ..... 29.75

Chicago, deld. .... 33.29

Swedeland, Pa., ovens ..... 29.50

Terre Haute, Ind., ovens ..... 29.75

\*Or within \$4.85 freight zone from works.

## Coal Chemicals

### Spot, cents per gallon, ovens

Pure benzene ..... 36.00

Toluene, one deg ..... 29.50

Industrial xylene ..... 32.00-34.00

### Per ton, bulk, ovens

Ammonium sulfate ..... \$32.00-34.00

### Cents per pound, producing point

Phenol: Grade 1, 17.50; Grade 2-3, 15.50; Grade 4, 17.50; Grade 5, 16.50; Grade 6, 14.50.

## Imported Steel

(Base per 100 lb, landed, duty paid, based on current ocean rates. Any increase in these rates is for buyer's account. Source of shipment: Western continental European countries.)

	North Atlantic	South Atlantic	Gulf Coast	West Coast
Deformed Bars, Intermediate, ASTM-A 305 ..	\$5.30	\$5.30	\$5.30	\$5.50
Bar Size Angles ..	5.05	5.05	5.05	5.42
Structural Angles ..	5.05	5.05	5.05	5.42
I-Beams ..	5.11	5.11	5.11	5.45
Channels ..	5.11	5.11	5.11	5.45
Plates (basic bessemer) ..	6.62	6.62	6.62	6.94
Sheets, H.R. ....	8.20	8.20	8.20	8.50
Sheets, C.R. (drawing quality) ..	8.75	8.75	8.75	9.12
Furring Channels, C.R., 1000 ft. 1/2 x 0.30 lb per ft. ....	25.71	25.59	25.59	26.46
Barbed Wire (†) ..	6.65	6.65	6.65	7.00
Merchant Bars ..	6.07	6.07	6.07	6.43
Hot-Rolled Bands ..	7.15	7.15	7.15	7.55
Wire Rods, Thomas Commercial No. 5 ..	6.50	6.50	6.50	6.90
Wire Rods, O.H. Cold Heading Quality No. 5 ..	7.07	7.07	7.07	7.47
Bright Common Wire Nails (‡) ..	8.02	8.02	7.92	8.20

†Per 82 lb net reel. ‡Per 100-lb kegs, 20d nails and heavier.



# Ferroalloys

## MANGANESE ALLOYS

**Spiegeleisen:** Carlot, per gross ton, Palmerton, Neville Island, Pa. 21-23% Mn, \$105; 19-21% Mn, 1-3% Si, \$102.50; 16-19% Mn, \$100.50.

**Standard Ferromanganese:** (Mn 74-76%, C 7% approx) base price per net ton, \$245. Johnstown, Duquesne, Sheridan, Neville Island, Pa.; Alloy, W. Va.; Ashtabula, Marietta, O.; Sheffield, Ala.; Portland, Ore. Add or subtract \$2 for each 1% or fraction thereof of contained manganese over 76% or under 74%, respectively. (Mn 79-81%). Lump \$253 per net ton, f.o.b. Anaconda or Great Falls, Mont. Add \$2.60 for each 1% above 81%; subtract \$2.60 for each 1% below 79%, fractions in proportion to nearest 0.1%.

**High-Grade Low-Carbon Ferromanganese:** (Mn 85-90%). Carload, lump, bulk, max 0.07% C, 35.1c per lb of contained Mn, carload packed 36.4c, ton lots 37.9c, less ton 39.1c. Delivered. Deduct 1.5c for max 0.15% C grade from above prices, 3c for max 0.03% C, 3.5c for max 0.5% C, and 6.5c for max 75% C—max 7% Si. **Special Grade:** (Mn 90% min, C 0.07% max, P 0.06% max). Add 2.05c to the above prices. Spot, add 0.25c.

**Medium-Carbon Ferromanganese:** (Mn 80-85%, C 1.25-1.5%, Si 1.5% max). Carload, lump, bulk, 25.5c per lb of contained Mn, packed, carload 26.8c, ton lot 28.4c, less ton 29.6c. Delivered. Spot, add 0.25c.

**Manganese Metal:** 2" x D (Mn 95.5% min, Fe 2% max, Si 1% max, C 0.2%). Carload, lump, bulk, 45c per lb of metal; packed, 45.75c; ton lot 47.25c; less ton lot 49.25c. Delivered. Spot, add 2c.

**Electrolytic Manganese Metal:** Min carload, 34c; 2000 lb to min carload, 36c; less ton, 38c; 50 lb cans, add 0.5c per lb. Premium for hydrogen-removed metal, 0.75c per lb. Prices are f.o.b. cars, Knoxville, Tenn., freight allowed to St. Louis or any point east of Mississippi; or f.o.b. Marietta, O., freight allowed.

**Silicomanganese:** (Mn 65-68%). Carload, lump, bulk 1.50% C grade, 18-20% Si, 12.8c per lb of alloy. Packed, c.l. 14c, ton 14.45c, less ton 15.45c, f.o.b. Alloy, W. Va.; Ashtabula, Marietta, O.; Sheffield, Ala.; Portland, Ore. For 2% C grade, Si 15-17%, deduct 0.2c from above prices. For 3% C grade, Si 12-14.5%, deduct 0.4c from above prices. Spot, add 0.25c.

## TITANIUM ALLOYS

**Ferrotitanium, Low-Carbon:** (Ti 20-25%, Al 3.5% max, Si 4% max, C 0.10% max). Contract, ton lot, 2" x D, \$1.50 per lb of contained Ti; less ton \$1.55. (Ti 38-43%, Al 8% max, Si 4% max, C 0.10% max). Ton lot \$1.35, less ton \$1.37, f.o.b. Niagara Falls, N. Y., freight allowed to St. Louis.

**Ferrotitanium, High-Carbon:** (Ti 15-18%, C 6-8%). Contract c.l. \$240 per ton, f.o.b. Niagara Falls, N. Y., freight allowed to destinations east of Mississippi River and north of Baltimore and St. Louis. Spot, \$245.

**Ferrotitanium, Medium-Carbon:** (Ti 17-21%, C 2-4%). Contract c.l. \$290 per ton, f.o.b. Niagara Falls, N. Y., freight not exceeding St. Louis rate allowed. Spot, \$295.

## CHROMIUM ALLOYS

**High-Carbon Ferrochrome:** Contract, c.l. lump, bulk 28.75c per lb of contained Cr; c.l. packed 30.30c, ton lot 32.05c; less ton 33.45c. Delivered. Spot, add 0.25c.

**Low-Carbon Ferrochrome:** Cr 63-66% (Simplex), carload, lump, bulk, C 0.025% max, 36.75c per lb contained Cr; C 0.010% max, 37.75c. Ton lot, add 3.5c; less ton, add 5.2c. Delivered.

Cr 67-71%, carload, lump, bulk, C 0.02% max, 41.00c per lb contained Cr; 0.025% max, 39.75c; 0.05% max, 39.00c; 0.10% max, 38.50c; 0.20% max, 38.25c; 0.50% max, 38.00c; 1.0% max, 37.75c; 1.5% max, 37.50c; 2.0% max, 37.25c. Ton lot, add 3.4c; less ton lot, add 5.1c. Delivered.

**Foundry Ferrochrome, High-Carbon:** (Cr 61-66%, C 5-7%, Si 7-10%). Contract, c.l. 2 in. x D, bulk 30.05c per lb of contained Cr. Packed, c.l. 31.65c, ton 33.45c, less ton 34.95c. Delivered. Spot, add 0.25c.

**Foundry Ferrosilicon Chrome:** (Cr 50-54%, Si 28-32%, C 1.25% max). Contract, carload packed, 8M x D, 21.25c per lb of alloy, ton lot 22.50c; less ton lot 23.70c. Delivered. Spot, add 0.25c.

**Ferrochrome-Silicon:** Cr 39-41%, Si 42-45%, C 0.05% max or Cr 33-36%, Si 45-48%, C 0.05% max. Carload, lump, bulk, 3" x down and 2" x down, 27.50c per lb contained Cr, 14.20c per lb contained Si. 0.75" x down, 28.65c per lb contained Cr, 14.20c per lb contained Si. Delivered.

**Chromium Metal, Electrolytic:** Commercial grade (Cr 99.8% min, metallic basis, Fe 0.2% max). Contract, carlot, packed 2" x D plate (about 1/4" thick) \$1.29 per lb, ton lot \$1.31, less ton lot \$1.33. Delivered. Spot, add 5c.

## VANADIUM ALLOYS

**Ferrovandium:** Open-hearth grade (V 50-55%, Si 8% max, C 3% max). Contract, any quantity, \$3.20 per lb of contained V. Delivered. Spot, add 10c. **Special Grade:** (V 50-55% or 70-75%, Si 2% max, C 0.5% max) \$3.30. **High Speed Grade:** (V 50-55%, or 70-75%, Si 1.50% max, C 0.20% max) \$3.40.

**Grainal:** Vanadium Grainal No. 1 \$1.05 per lb; No. 79, 50c, freight allowed.

**Vanadium Oxide:** Contract less carload lot, packed, \$1.38 per lb contained V<sub>2</sub>O<sub>5</sub>, freight allowed. Spot, add 5c.

## SILICON ALLOYS

**50% Ferrosilicon:** Contract, carload, lump, bulk, 14.20c per lb of contained Si. Packed c.l. 16.70c, ton lot 18.15c, less ton 19.80c, f.o.b. Alloy, W. Va.; Ashtabula, Marietta, O.; Sheffield, Ala.; Portland, Ore. Spot, add 0.45c.

**Low-Aluminum 50% Ferrosilicon:** (Al 0.40% max). Add 1.45c to 50% ferrosilicon prices.

**65% Ferrosilicon:** Contract, carload, lump, bulk, 15.25c per lb contained silicon. Packed, c.l. 17.25c, ton lot 19.05c, less ton 20.4c. Delivered. Spot, add 0.35c.

**75% Ferrosilicon:** Contract, carload, lump, bulk, 16.4c per lb of contained Si. Packed, c.l. 18.30c, ton lot 19.95c, less ton 21.2c. Delivered. Spot, add 0.3c.

**90% Ferrosilicon:** Contract, carload, lump, bulk, 19.5c per lb of contained Si. Packed, c.l. 21.15c, ton lot 22.55c, less ton 23.6c. Delivered. Spot, add 0.25c.

**Silicon Metal:** (98% min Si, 1.00% max Fe, 0.07% max Ca). C.l. lump, bulk, 21.00c per lb of Si. Packed, c.l. 22.65c, ton lot 23.95c, less ton 24.95c. Add 0.5c for max 0.03% Ca grade. Add 0.5c for 0.50% Fe grade analyzing min 98.25% min Si.

**Alsifer:** (Approx 20% Al, 40% Si, 40% Fe). Contract, basis f.o.b. Niagara Falls, N. Y., lump, carload, bulk, 9.60c per lb of alloy; ton lot, packed, 10.95c.

## ZIRCONIUM ALLOYS

**12-15% Zirconium Alloy:** (Zr 12-15%, Si 39-43%, C 0.20% max). Contract, c.l. lump, bulk, 9.25c per lb of alloy. Packed, c.l. 10.45c, ton lot 11.6c, less ton 12.45c. Delivered. Spot, add 0.25c.

**35-40% Zirconium Alloy:** (Zr 35-40%, Si 47-52%, Fe 8-12%, C 0.50% max). Contract, carload, lump, packed 27.25c per lb of alloy, ton lot 28.4c, less ton 29.65c. Freight allowed. Spot, add 0.25c.

## BORON ALLOYS

**Ferroboron:** (B 17.50% min, Si 1.50% max, Al 0.50% max, C 0.50% max). Contract, 100 lb or more 1" x D, \$1.20 per lb of alloy; less than 100 lb \$1.30. Delivered. Spot, add 5c. F.o.b. Washington, Pa., prices, 100 lb and over are as follows: Grade A (10-14% B) 85c per lb; Grade B (14-18% B) \$1.20; Grade C (19% min B) \$1.50.

**Borosil:** (3 to 4% B, 40 to 45% Si). Carload, bulk, lump, or 3" x D, \$5.25 per lb of contained B. Packed, carload, \$5.40, ton to c.l. \$5.50, less ton \$5.60. Delivered.

**Carbortam:** (B 1 to 2%). Contract, lump, carload \$320 per ton, f.o.b. Suspension Bridge, N. Y., freight allowed same as high-carbon ferrotitanium.

## CALCIUM ALLOYS

**Calcium-Manganese-Silicon:** (Ca 16-20%, Mn 14-18% and Si 53-59%). Contract, carload, lump, bulk 23c per lb of alloy, carload packed 24.25c, ton lot 26.15c, less ton 27.15c. Delivered. Spot, add 0.25c.

**Calcium-Silicon:** (Ca 39-33%, Si 60-65%, Fe 1.5-3%). Contract, carload, lump, bulk 24c per lb of alloy, carload packed 25.65c, ton lot 27.95c, less ton 29.45c. Delivered. Spot, add 0.25c.

## BRIQUETTED ALLOYS

**Chromium Briquets:** (Weighing approx 3 1/2 lb each and containing 2 lb of Cr). Contract, carload, bulk 19.60c per lb of briquet, carload packed in box pallets 19.80c, in bags 20.70c; 3000 lb to c.l. in box pallets 21.00c; 2000 lb to c.l. in bags 21.90c; less than 2000 lb in bags 22.80c. Delivered. Add 0.25c for notching. Spot, add 0.25c.

**Ferromanganese Briquets:** (Weighing approx 3 lb and containing 2 lb of Mn). Contract, carload, bulk 14.8c per lb of briquet; c.l., packed, pallets 15c, bags 16c; 3000 lb to c.l., pallets 16.2c; 2000 lb to c.l., bags, 17.2c; less ton 18.1c. Delivered. Add 0.25c for notching. Spot, add 0.25c.

**Silicomanganese Briquets:** (Weighing approx 3 1/2 lb and containing 2 lb of Mn and approx 1/2 lb of Si). Contract, c.l. bulk 1b.c per lb of briquet; c.l. packed, pallets, 15.3c; bags 16.3c; 3000 lb to c.l., pallets, 16.5c; 2000 lb to c.l., bags 17.5c; less ton 18.4c. Delivered. Add 0.25c for notching. Spot, add 0.25c.

**Silicon Briquets:** (Large size—weighing approx 5 lb and containing 2 lb of Si). Contract, carload bulk 7.7c per lb of briquet; packed, pallets, 7.9c; bags 8.9c; 3000 lb to c.l., pallets 9.5c; 2000 lb to c.l., bags 10.5c; less ton 11.4c. Delivered. Spot, add 0.25c. (Small size—weighing approx 2 1/2 lb and containing 1 lb of Si). Carload, bulk 7.85c. Packed, pallets 8.05c; bags 9.05c; 3000 lb to c.l., pallets 9.65c; 2000 lb to c.l., bags, 10.65c; less ton 11.55c. Delivered. Add 0.25c for notching, small size only. Spot, add 0.25c.

**Molybdenum-Oxide Briquets:** (Containing 2 1/2 lb of Mo each). \$1.41 per pound of Mo contained, f.o.b. Langeloth, Pa.

## TUNGSTEN ALLOYS

**Ferrotungsten:** (70-80%), 5000 lb W or more \$2.15 per lb (nominal) of contained W. Delivered.

## OTHER FERROALLOYS

**Ferrocolumbium:** (Cb 50-60%, Si 8% max, C 0.4% max). Ton lots 2" x D, \$4 per lb of contained Cb; less ton lots, \$4.05 (nominal). Delivered.

**Ferrotantalum Columbium:** (Cb 40% approx, Ta 20% approx, and Cb plus Ta 60% min, C 0.30% max). Ton lot 2" x D, \$3.80 per lb of contained Cb plus Ta, delivered; less ton lot \$3.85 (nominal).

**SMZ Alloy:** (Si 60-65%, Mn 5-7%, Zr 5-7%, Fe 20% approx). Contract, c.l. packed 1/2-in. x 12 M 20.00c per lb of alloy, ton lot 21.15c, less ton 22.40c. Delivered. Spot, add 0.25c.

**Graphidox No. 4:** (Si 48-52%, Ca 5-7%, Ti 9-11%). C.l. packed, 20c per lb of alloy, ton lot 21.15c; less ton lot 22.4c, f.o.b. Niagara Falls, N. Y.; freight allowed to St. Louis.

**V-5 Foundry Alloy:** (Cr 38-42%, Si 17-19%, Mn 8-11%). C.l. packed 18.45c per lb of alloy; ton lot 19.95c; less ton lot 21.20c, f.o.b. Niagara Falls, N. Y.; freight allowed to St. Louis.

**Simanal:** (Approx 20% each Si, Mn, Al; bal Fe). Lump, carload, bulk 18.50c. Packed c.l. 19.50c, 2000 lb to c.l. 20.50c; less than 2000 lb 21c per lb of alloy. Delivered.

**Ferrophosphorus:** (23-25% based on 24% P content with unitage of \$5 for each 1% of P above or below the base); carload, bulk, f.o.b. sellers' works, Mt. Pleasant, Siglo, Tenn., \$120 per gross ton.

**Ferromolybdenum:** (55-75%). Per lb of contained Mo, in 200-lb container, f.o.b. Langeloth and Washington, Pa. \$1.63 in all sizes except powdered which is \$1.74.

**Technical Molybdenum-Oxide:** Per lb of contained Mo, in cans, \$1.39; in bags, \$1.38, f.o.b. Langeloth and Washington, Pa.



(Concluded from Page 104)

#### STRUCTURAL STEEL PENDING

- 5245 tons, section, State Bronx Expressway, New York, bids Aug. 7.
- 1259 tons, state bridgework, Niagara County, New York, bids Aug. 7.
- 780 tons, three-span welded girder bridge, Naugatuck River, Derby, Conn.; Mariani Construction Co., New Haven, Conn., general contractor.
- 615 tons, four state bridges, one pedestrian bridge and underpass, Waterbury, Conn.; D. Arrigoni Construction Co., Middletown, Conn., general contractor.
- 485 tons, four-span plate girder bridge, Farmington River, Bloomfield-East Granby, Conn.; M. A. Gammino Construction Co., Providence, R. I., general contractor.
- 335 tons, two grade separation structures, Route 9, Bloomfield-Simsburg, Conn.; Enfield Road Construction Co., Enfield, Conn., general contractor.
- 100 tons or more, gates, trash racks, etc.; also 25 tons of reinforcing, diversion canal, Rouge River project, Oregon; bids to the Bureau of Reclamation, Camp White, Oreg., Aug. 20.
- 100 tons or more, 350-ft welded plate highway bridge, Lincoln County, Oreg.; Workman & Wilson, Canby, Oreg., low at \$127,720.

#### REINFORCING BARS . . .

##### REINFORCING BARS PLACED

- 260 tons, Washington State undercrossing, Pierce County, to Bethlehem-Pacific Coast Steel Corp., Seattle; general contract to Ostruske-Murphy Inc., Tacoma, Wash., low at \$162,000.
- 200 tons, two Washington State highway bridges, Okanogan County, to Soule Steel Co., Portland, Oreg.; Everett McKellar, Chelan, Oreg., general contractor, low at \$414,000.
- 150 tons, miscellaneous small projects, to Bethlehem Pacific Coast Steel Corp., Seattle.

##### REINFORCING BARS PENDING

- 600 tons, North Seattle High School; general contract to Sound Construction & Engineering Co., Seattle, low at \$2,364,036.
- 260 tons, airfield project, Fairbanks, Alaska; general contract to Donald W. Close Co. Seattle.
- 250 tons, also gates and equipment, Eagle Gorge Dam, Green River, Washington State; U. S. Engineer, Seattle, to invite bids in September for November opening.
- 130 tons, Washington State girder bridge, Cowlitz County; R. L. Martin, Oswego, Oreg., low at \$161,201.
- 100 tons, West Seattle sewage plant; G. R. Leischner Co., Seattle, low.
- 100 tons, junior high school, Renton, Wash.; George E. Teufel Co., Seattle, low base bid at \$651,670.
- 85 tons, Washington State highway bridge, Pierce County; bids to Olympia, Wash., Aug. 19.
- 70 tons, Washington State slab overcrossing, Grant County; bid to Olympia, Wash., Aug. 19.
- 54 tons, two schedules, additions to Seattle-Tacoma International Airport; James I. Barnes Construction Co., Seattle, low at \$420,000 and \$112,582, to the Port of Seattle.
- Unstated, junior high school, Opportunity, Wash.; Peter J. Young, Spokane, Wash., low base \$455,600.
- Unstated, four Idaho State highway bridges, Teton County; Eagle Construction Co., Boise, Idaho, low at \$593,293.
- Unstated, Idaho State highway project, Bannock County; general contract to Cherf Bros. & Sandkay Contractors, Ephrata, Wash., low at \$989,883.
- Unstated, Idaho highway bridges, Clark and Jefferson Counties; general contract to Western Construction Co., Pocatello, Idaho, low at \$168,499.
- Unstated, Oregon State, low bids on highway projects, Clatsop County, 210-ft bridge, R. L. Martin Co., Oswego, Oreg., \$40,129; Coos County, 210-ft bridge and approaches, Sig Anderson Co., Coos Bay \$128,803; also

90-ft bridge and paving, F. L. Somers, Medford, \$631,055; Polk County, 182-ft span, O. C. Bennard, Portland, Oreg., \$40,043; Washington County, 172-ft deck girder, Valley Construction Co., Portland, Oreg., \$51,255.

#### PLATES . . .

##### PLATES PLACED

- 100 tons or more, standpipe, Stoughton, Mass., to Graver Tank & Mfg. Co. Inc., Chicago.

##### PLATES PENDING

- 1041 tons, carbon, Mil-S-16113B (Navy); bids Aug. 11, General Stores Supply Office, Philadelphia.
- 505 tons, alloy, high tensile, grade HY-80; bids Aug. 11, Navy Purchasing Office, Washington, D. C.
- 130 tons, elevated water tank, District No. 100, Seattle; bids in.
- 125 tons, high tensile, grade H; bids Aug. 11, Navy Purchasing Office, Washington, D. C.; also 65 tons, carbon bars, flats, grade M, bids Aug. 12.
- Unstated, bulk storage fuel facility, Fairbanks, Alaska, to Chris. Berg Inc., Seattle, low at \$83,400, to the Bureau of Public Roads.

#### PIPE . . .

##### CAST IRON PIPE PLACED

- 151 tons, 4 to 8 in., Aberdeen, Wash., to the Pacific States Cast Iron Pipe Co., Seattle.

##### CAST IRON PIPE PENDING

- 300 tons, 8 in., two local improvement districts; bids in to Seattle.
- 150 tons, 3600 ft of 12 in.; bids to James Davies, secretary, Alderwood Manor, Wash., Aug. 11.
- 100 tons, 4 and 6 in., and fittings; bids to District No. 61, Seattle, Aug. 7.
- Unstated, 1100 ft, submarine crossing; bids to John L. Sugars, clerk, Everett, Wash., Aug. 14.

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By Albert Portevin

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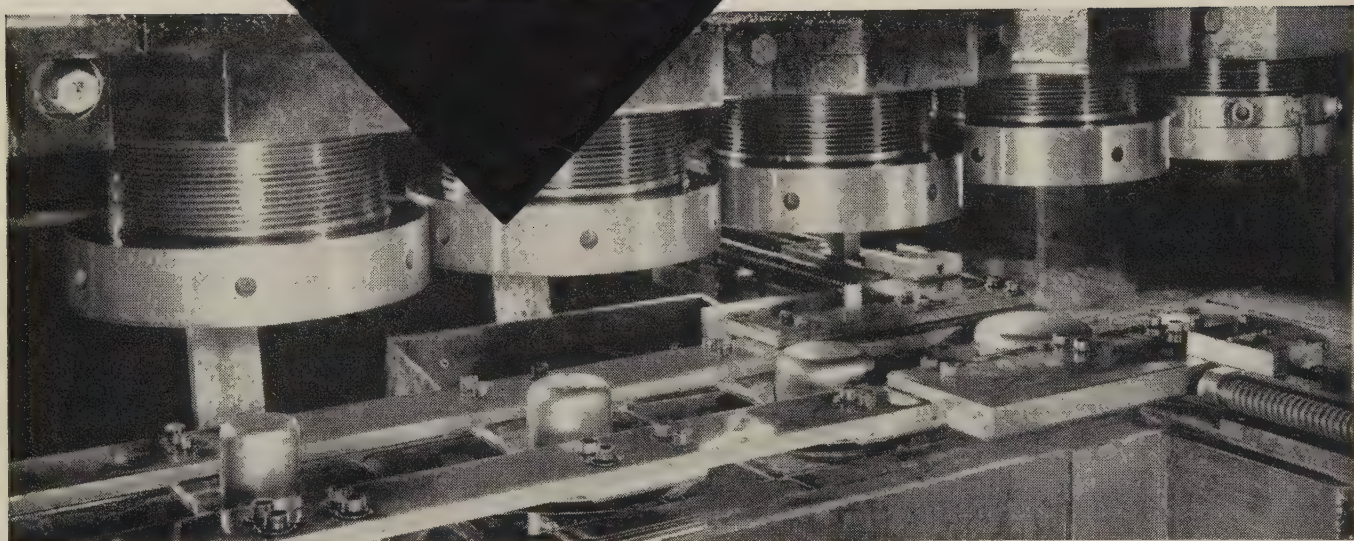
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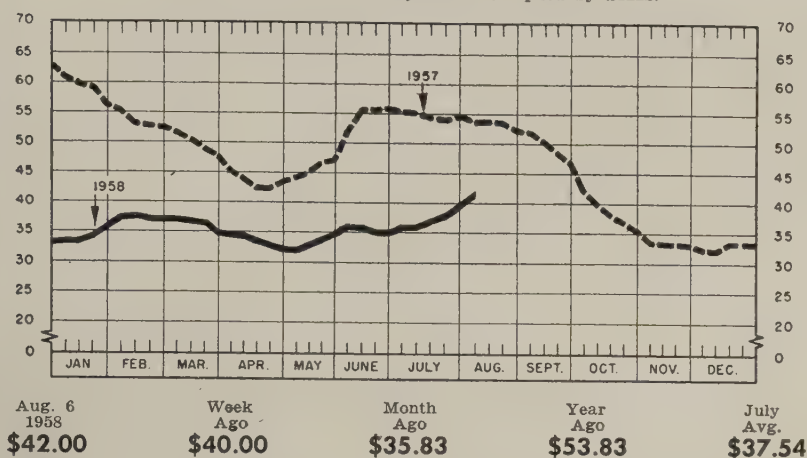
## *Carpenter*

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## STEELMAKING SCRAP PRICE COMPOSITE

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# Scrap Rise Meets Buyer Resistance

STEEL's composite advances further to \$42, but consumers withdraw from market after brief buying flurry. National ingot rate holds unchanged at 59 per cent of capacity

Scrap Prices, Page 118

**Pittsburgh** — Brokers think the market has lost much of its upward momentum. They expect little change through the end of the month, unless a shortage of railroad scrap develops. Higher prices paid for industrial bundles and railroad scrap reflect brokers' confidence that mills will soon increase their purchases. Fisher Body bundles brought \$49.30, about \$10 more than last month. The B&O Railroad sold scrap to brokers at these prices: No. 1 heavy melting, \$48.75 (up \$8); specialties, \$51.25 (up \$6); random rails, \$57.

**Philadelphia** — Most grades of scrap are higher and are reaching a point where sellers are a little more inclined than they were to let go of some tonnage. This is especially true as two of the larger eastern consumers show no signs of early buying.

Based on small purchases, No. 1 and No. 2 heavy melting are higher at \$38 and \$34. Also on modest buying, No. 1 bundles and No. 1 busheling are up \$2 a ton to \$38, delivered; and electric furnace bundles are up \$1 to \$39. Short shoveling turnings are up \$2 to \$23; machine shop turnings, \$1 to \$20;

and heavy turnings, \$3 to \$33. No. 2 bundles are nominally higher at \$25.

Other revisions include a \$2 advance on rail crops, 2 ft and under, to a spread of \$57-\$58, delivered; and a \$1 increase on drop broken machinery cast to \$48-\$50. No. 1 cupola cast is holding at \$40, up from a spread of \$38-\$40. Heavy breakable cast is unchanged at \$41, delivered.

About 2500 tons of short shoveling turnings are being loaded for export at this port.

**New York**—Major grades of scrap are in tight supply, with brokers having to advance their buying prices on several items. They have increased their offerings on No. 1 heavy melting and No. 1 bundles to \$32-\$33, on No. 2 bundles to \$19-\$20. They are paying higher prices for low phos structurals and plates (\$35-\$36) and \$27-\$28 for unstripped motor blocks.

**Boston** — The heavier grades of steel scrap are firmer, being quoted \$1 to \$2 a ton higher. No. 2 heavy melting and No. 2 bundles are \$2 higher on buying, including export for August. No. 1 and mixed cupola cast are also stronger.

**Chicago**—Scrap prices are still

climbing—but not as fast as they were. Open hearth grades are up only \$1 or so over what they were a week ago. Steel mill resistance is responsible for the weaker price tone. Mills simply are not buying. In the last three weeks the Chicago district steelmaking rate has increased about 2 points weekly, and the national rate has climbed an average of 1.5 points for four weeks. The advance in scrap prices has been at a much faster pace.

**Cleveland**—There haven't been any sales of open-hearth scrap here the last week or so, but on the basis of the last sale of the grade in the Valley at \$43, the market here has moved up about \$1 on No. 1 heavy melting—now quoted at \$39.50-\$40.50. The blast furnace grades are also stronger and higher, as are the foundry grades on some buying by the casting shops. Several items on the railroad list have been marked up \$2 and \$3 a ton.

**Youngstown** — Scrap dealers are keeping a watchful eye on market developments. Some new orders are expected following last week's rise of No. 1 heavy melting to \$43, based on orders from two major mills. There are large tonnages of No. 2 scrap on hand, and little interest is being shown in that grade. Substantial buying of No. 1 grade, though, will be quickly reflected in better demand for No. 2.

**Detroit**—Lack of orders following an upsurge in auto list prices has caused a momentary halt in dealer confidence, although the immediate outlook still is bullish. Foundry items reflect the recent steel scrap price increases.

Two days after the auto lists closed dealers started talking lower prices on small tonnage offerings, particularly on No. 1 grades. Sheet clippings, going for \$38-\$39 shortly after the lists closed, dropped back to around \$36-\$37 by the middle of last week.

**Buffalo**—Scrap prices here jumped last week on mill business for August delivery. A leading consumer paid \$30 for No. 2 heavy melting and \$28 for No. 2 bundles. Both grades are up \$6 from previous sales.

No. 1 heavy melting at \$34-\$35 is up \$7 a ton, primarily on sales to out-of-district buyers. The blast

(Please turn to Page 123)



# Iron and Steel Scrap

Consumer prices per gross ton, except as otherwise noted, including brokers' commission, as reported to STEEL, Aug. 6, 1958. Changes shown in italics.

## STEELMAKING SCRAP COMPOSITE

Aug. 6	\$42.00
July 30	40.00*
July Avg.	37.54*
Aug. 1957	53.33
Aug. 1953	43.40

Based on No. 1 heavy melting grade at Pittsburgh, Chicago, and eastern Pennsylvania.

\*Revised.

## PITTSBURGH

No. 1 heavy melting	44.00-45.00
No. 2 heavy melting	35.00-36.00
No. 1 dealer bundles	44.00-45.00
No. 2 bundles	33.00-34.00
No. 1 busheling	44.00-45.00
No. 1 factory bundles	49.00-50.00
Machine shop turnings	20.00-21.00
Mixed borings, turnings	20.00-21.00
Short shovel turnings	24.00-25.00
Cast iron borings	24.00-25.00
Cut structurals:	
2 ft and under	47.00-48.00
3 ft lengths	46.00-47.00
Heavy turnings	41.00-42.00
Punchings & plate scrap	49.00-50.00
Electric furnace bundles	49.00-50.00

### Cast Iron Grades

No. 1 cupola	43.00-44.00
Stove plate	41.00-42.00
Unstripped motor blocks	23.00-24.00
Clean auto cast	39.00-40.00
Drop broken machinery	51.00-52.00

### Railroad Scrap

No. 1 R.R. heavy melt.	49.00-50.00
Rails, 2 ft and under	57.00-58.00
Rails, 18 in. and under	58.00-59.00
Random rails	54.00-55.00
Railroad specialties	51.00-52.00
Angles, splice bars	53.00-54.00
Rails, rerolling	58.00-59.00

### Stainless Steel Scrap

18-8 bundles & solids	190.00-195.00
18-8 turnings	100.00-105.00
430 bundles & solids	110.00-115.00
430 turnings	50.00-52.00

## CHICAGO

No. 1 hvy melt, indus.	44.00-45.00
No. 1 hvy melt, dealer	42.00-43.00
No. 2 heavy melting	36.00-37.00
No. 1 factory bundles	48.00-49.00
No. 1 dealer bundles	42.00-43.00
No. 2 bundles	29.00-30.00
No. 1 busheling, indus.	44.00-45.00
No. 1 busheling, dealer	42.00-43.00
Machine shop turnings	23.00-24.00
Mixed borings, turnings	25.00-26.00
Short shovel turnings	25.00-26.00
Cast iron borings	25.00-26.00
Cut structurals, 3 ft	49.00-50.00
Punchings & plate scrap	50.00-51.00

### Cast Iron Grades

No. 1 cupola	45.00-46.00
Stove plate	43.00-44.00
Unstripped motor blocks	38.00-39.00
Clean auto cast	51.00-52.00
Drop broken machinery	51.00-52.00

### Railroad Scrap

No. 1 R.R. heavy melt.	48.00-49.00
R.R. malleable	57.00-58.00
Rails, 2 ft and under	60.00-61.00
Rails, 18 in. and under	61.00-62.00
Angles, splice bars	55.00-56.00
Axles	67.00-68.00
Rails, rerolling	64.00-65.00

### Stainless Steel Scrap

18-8 bundles & solids	185.00-190.00
18-8 turnings	100.00-105.00
430 bundles & solids	100.00-105.00
430 turnings	55.00-60.00

## YOUNGSTOWN

No. 1 heavy melting	43.00-44.00
No. 2 heavy melting	30.00-31.00*
No. 1 busheling	43.00-44.00
No. 1 bundles	43.00-44.00
No. 2 bundles	30.00-31.00*
Machine shop turnings	15.00-16.00*
Short shovel turnings	20.00-21.00
Cast iron borings	20.00-21.00
Low phos.	45.00-46.00
Electric furnace bundles	45.00-46.00

### Railroad Scrap

No. 1 R.R. heavy melt.	47.00-48.00†
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## CLEVELAND

No. 1 heavy melting	39.50-40.50
No. 2 heavy melting	26.00-27.00
No. 1 factory bundles	46.00-47.00
No. 1 bundles	39.50-40.50
No. 2 bundles	28.00-29.00
No. 1 busheling	39.50-40.50
Machine shop turnings	14.00-15.00
Short shovel turnings	19.00-20.00
Mixed borings, turnings	19.00-20.00
Cast iron borings	19.00-20.00
Cut foundry steel	41.00-42.00
Cut structurals, plates	49.00-50.00
2 ft and under	49.00-50.00
Low phos, punchings & plate	41.00-42.00
Alloy free, short shovel turnings	22.00-23.00
Electric furnace bundles	40.50-41.50

### Cast Iron Grades

No. 1 cupola	44.00-45.00
Charging box cast	37.00-38.00†
Heavy breakable cast	36.00-37.00
Stove plate	46.00-47.00
Unstripped motor blocks	32.00-33.00
Brake shoes	36.00-37.00
Clean auto cast	49.00-50.00
Burnt cast	33.00-34.00
Drop broken machinery	49.00-50.00

### Railroad Scrap

R.R. malleable	60.00-61.00
Rails, 2 ft and under	57.00-58.00
Rails, 18 in. and under	58.00-59.00
Rails, random lengths	52.00-53.00
Cast steel	49.00-50.00
Railroad specialties	50.00-51.00
Uncut tires	43.00-44.00
Angles, splice bars	50.00-51.00
Rails, rerolling	56.00-57.00

### Stainless Steel

(Brokers' buying prices; f.o.b. shipping point)

18-8 bundles, solids	185.00-190.00
18-8 turnings	100.00-105.00
430 clips, bundles, solids	90.00-100.00
430 turnings	40.00-50.00

## ST. LOUIS

(Brokers' buying prices)

No. 1 heavy melting	39.00
No. 2 heavy melting	37.00
No. 1 bundles	41.00
No. 2 bundles	30.00
No. 1 busheling	41.00
Machine shop turnings	20.00†
Short shovel turnings	22.00†

### Cast Iron Grades

No. 1 cupola	45.00
Charging box cast	39.00
Heavy breakable cast	38.00
Unstripped motor blocks	39.00
Clean auto cast	44.00
Stove plate	44.00

### Railroad Scrap

No. 1 R.R. heavy melt.	45.00
Rails, 18 in. and under	52.00
Rails, random lengths	48.00
Rails, rerolling	60.00
Angles, splice bars	47.00

## BIRMINGHAM

No. 1 heavy melting	35.00-36.00*
No. 2 heavy melting	30.00-31.00*
No. 1 bundles	35.00-36.00*
No. 2 bundles	20.00-21.00*
No. 1 busheling	35.00-36.00*
Cast iron borings	12.00-13.00
Machine shop turnings	21.00-22.00
Short shovel turnings	22.00-23.00
Bars, crops and plates	44.00-45.00
Structurals & plates	44.00-45.00
Electric furnace bundles	39.00-40.00
Electric furnace:	
2 ft and under	38.00-39.00
3 ft and under	37.00-38.00

### Cast Iron Grades

No. 1 cupola	53.00-54.00
Stove plate	51.00-52.00
Unstripped motor blocks	41.00-42.00
Charging box cast	22.00-23.00
No. 1 wheels	38.00-39.00

### Railroad Scrap

No. 1 R.R. heavy melt.	39.00-40.00
Rails, 18 in. and under	49.00-50.00
Rails, rerolling	59.00-60.00
Rails, random lengths	45.00-46.00
Angles, splice bars	45.00-46.00

## PHILADELPHIA

No. 1 heavy melting	38.00
No. 2 heavy melting	34.00
No. 1 bundles	38.00
No. 2 bundles	25.00†
No. 1 busheling	39.00
Electric furnace bundles	39.00
Mixed borings, turnings	19.00†
Short shovel turnings	23.00
Machine shop turnings	20.00
Heavy turnings	33.00
Structural & plate	42.00-43.00
Couplers, springs, wheels	43.50
Rail crops, 2 ft & under	57.00-58.00
Cast Iron Grades	
No. 1 cupola	40.00
Heavy breakable cast.	41.00†
Malleable	58.00-59.00
Drop broken machinery	48.00-50.00

## NEW YORK

(Brokers' buying prices)

No. 1 heavy melting	32.00-33.00
No. 2 heavy melting	29.00
No. 1 bundles	32.00-33.00
No. 2 bundles	19.00-20.00
Machine shop turnings	8.00-9.00
Mixed borings, turnings	9.00-10.00
Short shovel turnings	11.00-12.00
Low phos (structurals & plates)	35.00-36.00

### Cast Iron Grades

No. 1 cupola	35.00-36.00
Unstripped motor blocks	27.00-28.00
Heavy breakable	33.00-34.00

### Stainless Steel

18-8 sheets, clips, solids	165.00-170.00
18-8 borings, turnings	50.00-55.00
410 sheets, clips, solids	50.00-55.00
430 sheets, clips, solids	60.00-65.00

## BUFFALO

No. 1 heavy melting	34.00-35.00
No. 2 heavy melting	29.00-30.00
No. 1 bundles	34.00-35.00
No. 2 bundles	27.00-28.00
No. 1 busheling	34.00-35.00
Mixed borings, turnings	17.00-18.00
Machine shop turnings	14.00-15.00
Short shovel turnings	19.00-20.00
Cast iron borings	17.00-18.00
Low phos, structurals and plate, 5 ft and under	39.00-40.00
2 ft and under	43.00-44.00
Cast Iron Grades (F.o.b. shipping point)	
No. 1 cupola	38.00-39.00
No. 1 machinery	42.00-43.00

### Railroad Scrap

Rails, random lengths	53.00-54.00
Rails, 3 ft and under	59.00-60.00
Railroad specialties	43.00-44.00

## CINCINNATI

(Buyers' buying prices; f.o.b. shipping point)

No. 1 heavy melting	38.50-39.50
No. 2 heavy melting	33.50-34.50
No. 1 bundles	38.50-39.50
No. 2 bundles	26.00-27.00
No. 1 busheling	38.50-39.50
Machine shop turnings	19.00-20.00
Mixed borings, turnings	18.00-19.00
Short shovel turnings	21.00-22.00
Cast iron borings	18.00-19.00
Low phos, 18 in.	42.00-43.00

### Cast Iron Grades

No. 1 cupola	42.00-43.00
Heavy breakable cast	34.00-35.00
Charging box cast	34.00-35.00
Drop broken machinery	46.00-47.00

### Railroad Scrap

No. 1 R.R. heavy melt.	42.00-43.00
Rails, 18 in. and under	53.00-54.00
Rails, random lengths	43.00-44.00

## HOUSTON

(Brokers' buying prices; f.o.b. cars)	
No. 1 heavy melting	32.00
No. 2 heavy melting	30.00
No. 1 bundles	32.00
No. 2 bundles	21.00†
Machine shop turnings	14.00
Short shovel turnings	17.00
Low phos, plates	
structurals	39.00

### Cast Iron Grades

No. 1 cupola	42.00
Heavy breakable	30.00†
Unstripped motor blocks	36.00

### Railroad Scrap

No. 1 R.R. heavy melt	34.00
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## BOSTON

(Brokers' buying prices; f.o.b. shipping point)

No. 1 heavy melting	24.00
No. 2 heavy melting	21.00
No. 1 bundles	24.00
No. 2 bundles	17.00
No. 1 busheling	24.00
Machine shop turnings	6.00-7.00
Mixed borings, turnings	6.00-7.00
Short shovel turnings	7.00-8.00
No. 1 cast	30.00
Mixed cupola cast	29.00
No. 1 machinery cast	36.00-38.00

## DETROIT

(Brokers' buying prices; f.o.b. shipping point)

No. 1 heavy melting	35.00-36.00
No. 2 heavy melting	26.00-27.00
No. 1 bundles	38.00-39.00
No. 2 bundles	23.00-24.00
No. 1 busheling	35.00-36.00
Machine shop turnings	11.00-12.00
Mixed borings, turnings	12.00-13.00
Short shovel turnings	13.00-14.00
Punchings & plate	35.00-36.00
Cast Iron Grades	
No. 1 cupola	40.00-41.00
Stove plate	30.00-31.00
Charging box cast	30.00-31.00
Heavy breakable	29.00-30.00
Unstripped motor blocks	19.00-20.00
Clean auto cast	41.00-42.00

## SEATTLE

No. 1 heavy melting	30.00†
No. 2 heavy melting	28.00†
No. 1 bundles	22.00†
No. 2 bundles	20.00†
Machine shop turnings	9.00-10.00†
Mixed borings, turnings	9.00-10.00†
Electric furnace No. 1.	38.00

### Cast Iron Grades

No. 1 cupola	31.00
Heavy breakable cast.	28.00
Unstripped motor blocks	23.00
Stove plate (f.o.b. plant)	21.00

## LOS ANGELES

No. 1 heavy melting	32.00
No. 2 heavy melting	30.00
No. 1 bundles	28.00
No. 2 bundles	20.00
Machine shop turnings	11.00
Shoveling turnings	11.00
Cast iron borings	11.00
Cut structurals and plate 1 ft and under	45.00

### Cast Iron Grades

(F.o.b. shipping point)	
No. 1 cupola	41.00

### Railroad Scrap

No. 1 R.R. heavy melt.	3
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# Aluminum Price Upped

Adjustment calls for an increase of 0.7 cent a pound in pig, plus equivalent advances in mill products. Copper market is showing more signs of strength

Nonferrous Metal Prices, Pages 122 & 123

ALUMINUM producers boosted their prices on Aug. 1 to recoup some of the added labor costs that went into effect on that date. Pig now sells for 24.7 cents a pound, an increase of 0.7 cent. Prices on mill products are being revised correspondingly.

**Chronology**—Aluminum Co. of America initiated the action. It was followed quickly by the other producers. Especially significant was Aluminium Ltd.'s rapid announcement that it would meet the higher price. It's doubtful whether domestic producers could have maintained the new quotation in the face of opposition from Aluminium.

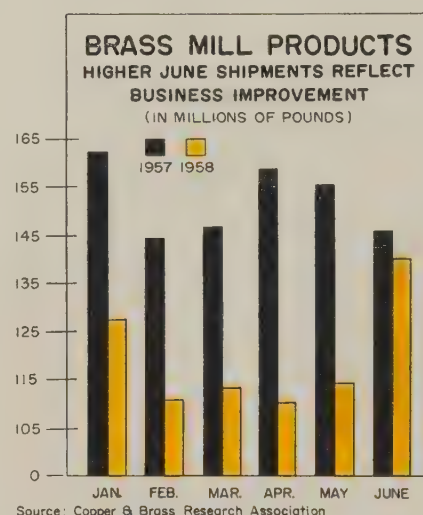
**Why**—Producers had hinted for several weeks that they would like to adjust quotations because of labor contracts calling for a package increase of 19 cents an hour on Aug. 1. They also had granted workers a 5 cent an hour, cost of living adjustment on Feb. 1, making labor costs 24 cents an hour higher.

**Unanswered**—The increase comes as no surprise because prices were about 8 per cent under the year-ago mark. (Pig was cut to 24 cents a pound on Apr. 1.) The amount of increase was a surprise. Producers offer no explanation, but observers point out that the 0.7-cent markup about matches the percentage increase steel put through. (Producers earlier had admitted they wouldn't be able to make an adjustment until steel made its move.) Another possible explanation is that domestic companies were afraid Aluminium might not go along with a stiffer hike.

**More To Come?**—Don't discount the possibility of another increase before next summer. Official statements leave the door wide open. Alcoa emphasized the price increase will restore "only part of last spring's reduction." Reynolds Metals Co. goes a step farther and calls

the boost "inadequate" while pointing out that prices must be high enough so new markets and new products can be developed.

Future action hinges largely on



how business improves. One indication it's on the upswing: Kaiser Aluminum & Chemical Corp. has reactivated 49,500 tons of idle primary capacity.

## Copper: Market Firmer

Copper continues to show sporadic signs of strength. Custom smelters on Aug. 1 kicked their price up to 27 cents a pound, 0.5 cent over the primary producers. This was the high-

est their price had been since last September and was 4 cents a pound over the figure quoted in March. However, on Aug. 6 a leading custom smelter initiated a move back to 26.50 cents.

Three probable reasons for the cut: 1. Fear that the Minerals Bill won't be passed in this session of Congress. 2. A small dropoff in London Metal Exchange quotation. 3. A little less activity on the commodity exchange.

**Improvement**—Primary producers say their sales are better domestically and remain "good" overseas. Kennecott Copper Corp. is stepping up production at its western mines from a four to a five day week, upping the company's operating rate to around 83 per cent of capacity.

Look for primary producers to hold at 26.5 cents a pound for the present. Acceptance of the copper stockpile program by Congress is the only foreseeable event that could trigger a boost.

Other plus signs in the market: 1. Katanga copper is selling at 26.3 cents per pound. 2. The French agency (GIRM) has hiked its price to 27.08 cents.

**Brass Mills**—They've had some improvement in buying since the first quarter, especially from the construction industry. June was by far the best month of the year (see chart). July wasn't too good because most mills shut down for two-week vacations.

Competition is still severe. Mills lowered their price on free cutting rods 1 cent a pound on July 1 and increased the discount for purchases of 10,000 lb or more from 1 to 2 cents a pound.

## NONFERROUS PRICE RECORD

	Price Aug. 6	Last Change	Previous Price	July Avg	June Avg	Aug., 1957 Avg
Aluminum .	24.70	Aug. 1, 1958	24.00	24.000	24.000	28.100
Copper .....	27.00	Aug. 6, 1958	26.50	26.125	25.400	28.639
Lead .....	10.80	July 1, 1958	11.30	10.800	11.040	13.800
Magnesium .	35.25	Aug. 13, 1958	33.75	35.250	35.250	35.250
Nickel .....	74.00	Dec. 6, 1956	64.50	74.000	74.000	74.000
Tin .....	96.25	Aug. 6, 1958	96.00	94.950	94.701	94.259
Zinc .....	10.00	July 1, 1957	10.50	10.000	10.000	10.000

Quotations in cents per pound based on: COPPER, mean of primary and secondary, deld. Conn. Valley; LEAD, common grade, deld. St. Louis; ZINC, prime western, E. St. Louis; TIN, Straits, deld. New York; NICKEL, electrolytic cathodes, 99.9%, base size at refinery, unpacked; ALUMINUM, primary pig, 99.5+%, f.o.b. shipping point; MAGNESIUM, pig, 99.8%, Velasco, Tex.

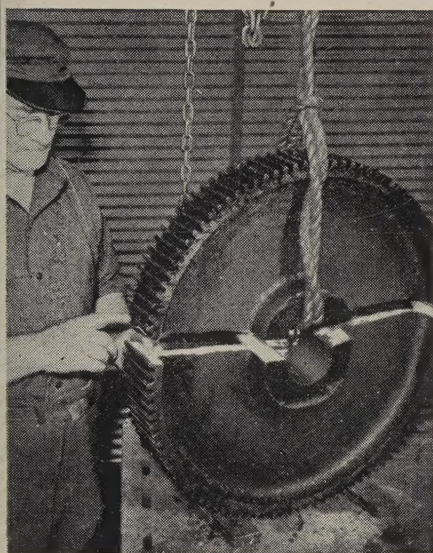




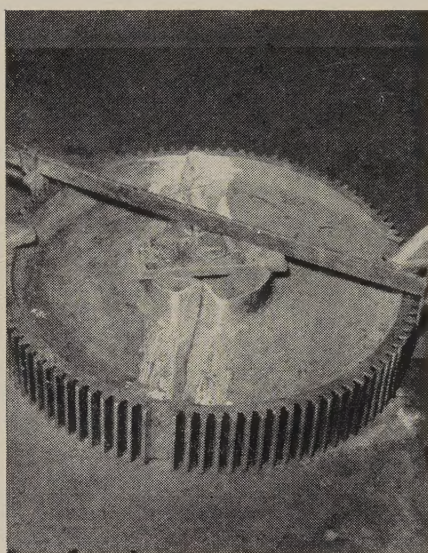
## WELDING CLINIC

J. Imperati and R. F. Pulver, Welding Engineers  
The American Brass Company, Waterbury, Conn.

# Braze Welding repairs saved this cast iron gear—and 2 to 4 weeks' production time



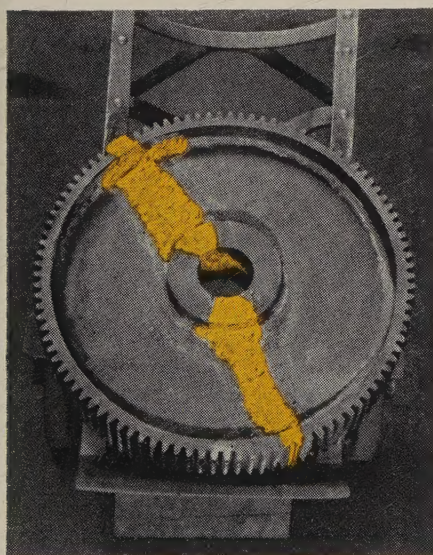
**1.** When a key came out and fell in the motor pinion of a big sheet mill flattener, this cast iron gear broke in half. Delivery on a new gear was 3 to 5 weeks. Braze welding repairs could return the machine to production in about a week.



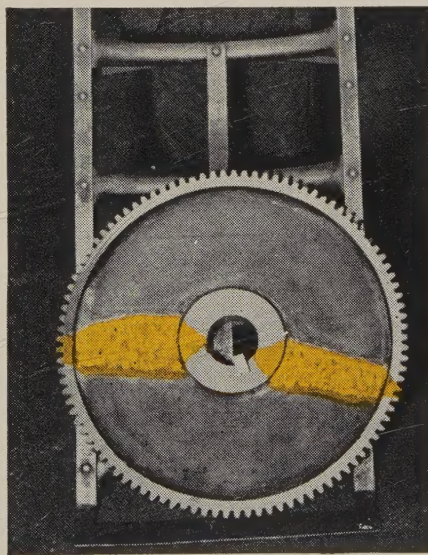
**2.** To save production time, it was decided to repair by braze welding. The 30" diameter gear with a 3" gear face and 1" thick solid web was prepared by chipping and grinding bevels on edges of the fracture from both sides. This took 11 man-hours.



**3.** The gear was preheated to 800 F with an oxypropane torch. Then the fracture was braze welded, and the damaged gear face built up to full diameter with Anaconda-997 (Low Fuming) Bronze Welding Rod. Total welding time, 14 man-hours.



**4.** After a period of slow cooling, the welded gear was ready for a trip to the mill's machine shop. Here it was trued up and new teeth were cut in the built-up bronze weld metal. This phase of the repair required only 15 man-hours.



**5.** The repaired gear on its way back to the sheet mill flattener in less than a week. The machine was reassembled and back in production in just one week for a total saving of two to four weeks of valuable production time.

Oxyacetylene braze welding with Anaconda-997 (Low Fuming) Bronze and Tobin Bronze®-481 Welding Rods is widely recognized as the easiest and least expensive repair method for cast iron. For full details, write for a copy of Publication B-13.

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## ANACONDA®

WELDING RODS

made by

The American Brass Company



# Nonferrous Metals

Cents per pound, carlots except as otherwise noted.

## PRIMARY METALS AND ALLOYS

**Aluminum:** 99.5%, pigs, 24.70; ingots, 26.80, 30,000 lb or more, f.o.b. shipping point. Freight allowed on 500 lb or more.

**Aluminum Alloy:** No. 13, 28.60; No. 43, 28.40; No. 195, 29.40; No. 214, 30.20; No. 356, 28.60, 30-lb ingots.

**Antimony:** R.M.M. brand, 99.5%, 29.00; Lone Star brand, 29.50; f.o.b. Laredo, Tex., in bulk. Foreign brands, 99.5%, 23.50-24.50, New York, duty paid, 10,000 lb or more.

**Beryllium:** 97% lump or beads, \$71.50 per lb, f.o.b. Cleveland or Reading, Pa.

**Beryllium Aluminum:** 5% Be, \$74.75 per lb of contained Be, with balance as Al at market price, f.o.b. shipping point.

**Beryllium Copper:** 3.75-4.25% Be, \$43 per lb of contained Be, with balance as Cu at market price on shipment date, f.o.b. shipping point.

**Bismuth:** \$2.25 per ton, ton lots.

**Cadmium:** Sticks and bars, \$1.55 per lb deld. **Cobalt:** 97.99%, \$2.00 per lb for 550-lb keg; \$2.02 per lb for 100 lb case; \$2.07 per lb under 100 lb.

**Columbium:** Powder, \$55-85 per lb, nom.

**Copper:** Electrolytic, 26.50 deld.; custom smelters, 27.00; lake, 26.50 deld.; fire refined, 26.25 deld.

**Germanium:** First reduction, \$179.17-197.31 per lb; intrinsic grade, \$197.31-220 per lb, depending on quantity.

**Gold:** U. S. Treasury, \$35 per oz.

**Indium:** 99.9%, \$2.25 per troy oz.

**Iridium:** \$70-80 nom. per troy oz.

**Lead:** Common, 10.80; chemical, 10.90; cor-rod, 10.90, St. Louis. New York basis, add 0.20.

**Lithium:** 98 + %, 50-100 lb, cups or ingots, \$12; rod, \$15; shot or wire, \$16. 100-500 lb, cups or ingots, \$10.50; rod, \$14; shot or wire, \$15, f.o.b. Minneapolis.

**Magnesium:** Pig, 35.25; ingot, 36.00 f.o.b. Velasco, Tex.; 12 in. thick, 59.00 f.o.b. Madison, Ill.

**Magnesium Alloys:** AZ91A (diecasting), 40.75 deld.; AZ63A, AZ92A, AZ91C (sand casting), 40.75, f.o.b. Velasco, Tex.

**Mercury:** Open market, spot, New York, \$233-237 per 76-lb flask.

**Molybdenum:** Unalloyed turned extrusions, 3.75-5.75 in. round, \$9.60 per lb in lots of 2500 lb or more, f.o.b. Detroit.

**Nickel:** Electrolytic cathodes, sheets (4 x 4 in. and larger), unpacked, 74.00; 10-lb pigs, unpacked, 73.25; "XX" nickel shot, 79.50; "F" nickel shot for addition to cast iron, 74.50; "F" nickel, 5 lb ingots in kegs for addition to cast iron, 75.50. Prices f.o.b. Port Colborne, Ont., including import duty, New York basis, add 1.01. Nickel oxide sinter at Buffalo, New York, or other established U. S. points of entry, contained nickel, 69.60.

**Osmium:** \$70-100 per troy oz nom.

**Palladium:** \$15-19 per troy oz.

**Platinum:** \$62-65 per troy oz from refineries.

**Radium:** \$16-21.50 per mg radium content, depending on quantity.

**Rhodium:** \$118-125 per troy oz.

**Ruthenium:** \$45-55 per troy oz.

**Selenium:** \$7.00 per lb, commercial grade.

**Silver:** Open market 88.625 per troy oz.

**Sodium:** 17.00 c.l.; 19.00-19.50 l.c.l.

**Tantalum:** Rod, \$60 per lb; sheet, \$55 per lb.

**Tellurium:** \$1.65-1.85 per lb.

**Thallium:** \$7.50 per lb.

**Tin:** Straits, N. Y., spot and prompt, 95.75.

**Titanium:** Sponge, 99.3 + % grade A-1, ductile (0.3% Fe max.), 2.05; grade A-2 (0.5% Fe max.), \$1.85 per lb.

**Tungsten:** Powder, 98.8%, carbon reduced, 1000-lb lots, \$3.15 per lb nom., f.o.b. shipping point; less than 1000 lb, add 15.00; 99 + % hydrogen reduced, \$3.30-3.85.

**Zinc:** Prime Western, 10.00; brass special, 10.25; intermediate, 10.50, East St. Louis, freight allowed over 0.50 per lb. New York basis, add 0.50. High grade, 11.00; special high grade, 11.25 deld. Diecasting alloy ingot No. 3, 12.25; No. 2, 12.75; No. 5, 12.50 deld.

**Zirconium:** Sponge, commercial grade, \$5-10 per lb.

(Note: Chromium, manganese, and silicon met-als are listed in ferroalloy section.)

## SECONDARY METALS AND ALLOYS

**Aluminum Ingot:** Piston alloys, 23.00-25.25; No. 12 foundry alloy (No. 2 grade), 21.75; 5% silicon alloy, 0.60 Cu max., 24.75; 13 alloy 0.60 Cu max., 24.75; 195 alloy, 24.75-26.00; 108 alloy, 22.25. Steel deoxidizing grades, notch bars, granulated or shot; Grade 1, 23.00; grade 2, 21.75; grade 3, 20.50; grade 4, 17.75.

**Brass Ingot:** Red brass, No. 115, 27.00; tin bronze, No. 225, 36.00; No. 245, 30.75; high-leaded tin bronze, No. 305, 31.25; No. 1 yellow, No. 405, 22.75; manganese bronze, No. 421, 24.50.

**Magnesium Alloy Ingot:** AZ63A, 37.50; AZ91B, 37.50; AZ91C, 41.25; AZ92A, 37.50.

## NONFERROUS PRODUCTS

### BERYLLIUM COPPER

(Base prices per lb, plus mill extras, 2000 to 5000 lb; nom. 1.9% Be alloy.) Strip, \$1.80, f.o.b. Temple, Pa., or Reading, Pa.; rod, bar, wire, \$1.78, f.o.b. Temple, Pa.

### COPPER WIRE

Bare, soft, f.o.b. eastern mills, 20,000-lb lots, 31.855; l.c.l., 32.48. Weatherproof, 20,000-lb lots, 33.66, l.c.l., 34.41, before quantity discounts.

### LEAD

(Prices to jobbers, f.o.b. Buffalo, Cleveland, Pittsburgh.) Sheets, full rolls, 140 sq ft or more, \$15.50 per cwt; pipe, full coils, \$15.50 per cwt; traps and bends, list prices plus 30%.

### TITANIUM

(Prices per lb, 10,000 lb and over, f.o.b. mill.) Sheets and strip, \$8.50-15.95; sheared mill plate, \$6.00-9.50; wire, \$6.50-11.00; forging billets, \$4.10-4.35; hot-rolled and forged bars, \$5.25-6.35.

### ZINC

(Prices per lb. c.l., f.o.b. mill.) Sheets, 24.00; ribbon zinc in coils, 20.50; plates, 19.00.

### ZIRCONIUM

Plate, \$12.50-19.20; H.R. strip, \$12.50-22.90; C.R. strip \$15.90-31.25; forged or H.R. bars, \$11.00-14.40.

### NICKEL, MONEL, INCONEL

	"A" Nickel	Monel	Inconel
Sheets, C.R. ....	126	106	128
Strips, C.R. ....	124	108	138
Plate, H.R. ....	120	105	121
Rod, Shapes, H.R. ....	107	89	109
Seamless Tubes ....	157	129	200

### ALUMINUM

Sheets: 1100, 3003, and 5005 mill finish (30,000 lb base; freight allowed).

Thickness Range, Inches	Flat Sheet	Coiled Sheet
0.249-0.136	41.10-45.60	.....
0.135-0.096	41.60-46.70	.....
0.125-0.096	.....	38.50-39.10
0.096-0.077	42.30-48.50	38.60-39.30
0.076-0.061	42.90-50.80	38.80-40.00
0.060-0.048	43.60-53.10	39.40-41.10
0.047-0.038	44.20-55.90	39.90-32.50
0.037-0.030	44.60-60.90	40.30-44.30
0.029-0.024	45.20-52.70	40.60-45.00
0.023-0.019	46.20-56.10	41.70-43.40
0.018-0.017	47.00-53.40	42.30-44.00
0.016-0.015	47.90-54.30	43.10-44.80
0.014	48.90	44.10-45.80
0.013-0.012	50.10	44.80
0.011	51.10	46.00
0.010-0.0095	52.60	47.40
0.009-0.0085	53.90	48.90
0.008-0.0075	55.50	50.10
0.007	57.00	51.60
0.006	58.60	53.00

## ALUMINUM (continued)

**Plates and Circles:** Thickness 0.250-3 in., 24-60 in. width or diam., 72-240 in. lengths.

Alloy	Plate Base	Circle Base
1100-F, 3003-F ....	41.70	46.50
5050-F .....	42.80	47.60
3004-F .....	43.80	49.50
5052-F .....	44.40	50.20
6061-T6 .....	44.90	51.00
2024-T4 .....	48.60	55.40
7075-T6* .....	56.40	64.00

\*24-48 in. width or diam., 72-180 in. lengths.

**Screw Machine Stock:** 30,000 lb base. Diam. (in.) or —Round— Hexagonal— across flats 2011-T3 2017-T4 2011-T3 2017-T4

### Drawn

0.125	76.20	73.20	....	....
0.156	64.20	61.40	....	....
0.172	....	61.40	....	....
0.188	64.20	61.40	....	79.60
0.203	64.20	61.40	....	....
0.219-0.234	61.00	59.50	....	....
0.250	61.00	59.50	88.40	75.90
0.266-0.281	61.00	59.50	....	....
0.313	61.00	59.50	81.40	72.20
0.344	60.50	....	81.40	....

### Cold-Finished

0.375-0.547	60.50	59.30	72.80	67.80
0.563-0.638	60.50	59.30	69.10	63.50
0.719	....	57.70	....	....
0.750-1.000	59.00	57.70	62.90	59.70
1.063	59.00	57.70	....	57.60
1.250-1.500	56.60	55.40	60.80	57.60

### Rolled

1.563	55.00	53.70	....	....
1.625-2.000	54.30	52.90	59.60	55.50
2.063	....	51.40	....	....
2.125-2.500	52.80	51.40	....	55.50
2.500-3.000	51.20	49.70	....	55.50
3.250-3.375	....	49.70	....	....

**Forging Stock:** Round, Class 1, random lengths, diam. 0.688-3 in., "F" temper; 2014, 41.50-54.30; 6061, 40.90-54.30; 7075, 42.90-56.30; 7070, 43.40-56.80.

**Pipe:** ASA schedule 40, alloy 6063-T6, standard lengths, plain ends, 90,000 lb base, dollars per 100 ft. Nominal pipe sizes: ¾ in., 18.60; 1 in., 29.35; 1½ in., 39.75; 2 in., 47.50; 2½ in., 57.40; 4 in., 157.60; 6 in., 282.95; 8 in., 425.80.

### Extruded Solid Shapes:

Factor	Alloy 6063-T5	Alloy 6062-T6
9-11	42.00-43.50	58.60-62.80
12-14	42.00-43.50	59.30-63.80
15-17	42.00-43.50	60.50-65.50
18-20	42.50-44.00	62.50-68.10

### MAGNESIUM

**Sheet and Plate:** AZ31B standard grade, 0.32 in., 103.10; .081 in., 77.90; .125 in., 70.40; .188 in., 69.00; .250-2.0 in., 67.90. AZ31B spec. grades, .032 in., 171.30; .081 in., 108.70; .125 in., 98.10; .188 in., 95.70; .250-2.00 in., 93.30. Tread plate, 60-192 in. lengths, 24-72 in. widths; .125 in., 74.90; .188 in., 71.70-72.70; .25-.75 in., 70-60-71.60. Tooling plate, .25-3.0 in., 73.00.

### Extruded Solid Shapes:

Factor	Com. Grade (AZ31C)	Spec. Grade (AZ31B)
6-8	69.60-72.40	84.60-87.40
12-14	70.70-73.00	85.70-88.00
24-26	75.60-76.30	90.60-91.30
36-38	89.20-90.30	104.20-105.30

## NONFERROUS SCRAP

### DEALER'S BUYING PRICES

(Cents per pound, New York, in ton lots.) **Copper and Brass:** No. 1 heavy copper and wire, 20.00-20.50; No. 2 heavy copper and wire, 18.25-18.75; light copper, 16.25-16.75; No. 1 composition red brass, 16.50-17.00; No. 1 com-

## BRASS MILL PRICES

### MILL PRODUCTS a

	Sheet, Strip, Plate	Rod	Wire	Seamless Tubes	Clean Rod	Heavy Ends	Turnings
Copper .....	49.63b	46.86c	....	49.82	22.500	22.500	21.750
Yellow Brass .....	43.57	29.28d	44.11	46.48	17.000	16.750	15.250
Low brass, 80% .....	46.03	45.97	46.57	48.84	19.000	18.750	18.250
Red Brass, 85% .....	46.89	46.83	47.43	49.70	19.750	19.500	19.000
Com. Bronze, 90% .....	48.30	48.24	48.84	50.86	20.625	20.375	19.875
Manganese Bronze .....	51.52	45.74	56.18	....	15.625	15.375	14.875
Muntz Metal .....	45.95	41.76	....	....	15.875	15.625	15.125
Naval Brass .....	47.83	42.14	54.89	50.99	15.625	15.375	14.875
Silicon Bronze .....	54.37	53.56	54.41	56.29	22.125	21.875	21.125
Nickel Silver, 10% .....	58.82	61.15	61.15	....	22.000	21.750	11.000
Phos. Bronze, A-5% .....	68.59	69.09	69.09	70.27	23.375	23.125	22.125

a. Cents per lb, f.o.b. mill; freight allowed on 500 lb or more. b. Hot-rolled. c. Cold-drawn. d. Free cutting. e. Prices in cents per lb for less than 20,000 lb, f.o.b. shipping point. On lots over 20,000 lb at one time, of any or all kinds of scrap, add 1 cent per lb.



(Concluded from Page 117)

furnace and railroad grades also are higher.

The sharp boost in prices is attributed to mounting steel production and strength at other market centers. Supplies in this area are relatively tight, and this has a strong bearing on prices.

**Cincinnati**—District mills entered the scrap market last week; their purchases sent prices on the principal steelmaking grades up \$2.50 a ton. No. 1 heavy melting is quoted at \$38.50-\$39.50 by dealers. Buying is concentrated in the principal grades, and the market may see a backpedal on secondary grade prices. Turnings, for example, moved up \$5 a ton, but buying is slim. Rising steel operations are contributing to market strength.

**St. Louis**—Local steel mills want more scrap, but dealers are holding back their supplies on a rising market. Within the last week prices went up \$1 to \$4 a ton. No. 1 heavy melting, No. 2 heavy melting, and No. 2 bundles advanced \$4; No. 1 bundles, \$3. Rerolling rails are \$60 a ton.

In a recent deal, a Kansas City mill's purchase boosted prices there \$5 a ton. As a result, St. Louis scrap brokers are blocked from

reaching into that territory for supplies.

**Birmingham**—Although the scrap market here has not moved along with the rest of the country, prices of most grades are advancing. A large Birmingham electric furnace raised its prices for electric furnace grades \$3 a ton. Cast iron went up \$1 in Birmingham and \$2 in Anniston.

Believing that strength in the electric furnace grades and buying by northern mills will be factors when next purchases of open hearth grades are made, brokers and dealers are quoting \$2 a ton higher on those grades than was paid recently by an Alabama mill.

**Houston**—Bullishness is giving the southwest scrap market a strong appearance. Most dealers and brokers expect mill buying support to develop. The leading mill, though, is standing by its offer to buy some scrap at the July prices, but it seems unlikely that much material will come out at that level. The second Texas mill says it will not return to the market this month.

Exporters have no firm plans to load scrap under the new European buying program from Gulf ports. One cargo for Spain, already accumulated, will be shipped from Baton Rouge and Beaumont. Buyers for Mexican mills are sitting

positions turnings, 15.50-16.00; new brass clippings, 14.00-14.50; light brass, 9.75-10.25; heavy yellow brass, 11.50-12.00; new brass rod ends, 12.00-12.50; auto radiators, unsweated, 13.50-14.00; cocks and faucets, 13.50-14.00; brass pipe, 13.50-14.00.

**Lead:** Heavy, 6.75-7.00; battery plates, 2.50-2.75; linotype and stereotype, 9.25-9.75; electrolyte, 7.50-8.00; mixed babbitt, 9.00-9.50.

**Monel:** Clippings, 28.00-29.00; old sheets, 25.00-26.00; turnings, 20.00-23.00; rods, 28.00-29.00.

**Nickel:** Sheets and clips, 42.00-45.00; rolled anodes, 42.00-45.00; turnings, 37.00-40.00; rod ends, 42.00-45.00.

**Zinc:** Old zinc, 3.00-3.25; new diecast scrap, 2.75-3.00; old diecast scrap, 1.50-1.75.

**Aluminum:** Old castings and sheets, 9.25-10.00; clean borings and turnings, 6.00-6.50; segregated low copper clips, 16.50-17.00; segregated high copper clips, 15.00-15.50; mixed low copper clips, 12.25-13.25; mixed high copper clips, 14.50-15.00.

(Cents per pound, Chicago)

**Aluminum:** Old castings and sheets, 10.50-11.00; clean borings and turnings, 9.50-10.00; segregated low copper clips, 16.00-16.50; segregated high copper clips, 14.50-15.00; mixed low copper clips, 15.00-15.50; mixed high copper clips, 14.00-14.50.

(Cents per pound, Cleveland)

**Aluminum:** Old castings and sheets, 9.25-10.00; clean borings and turnings, 8.50-9.00; segregated low copper clips, 13.50-14.00; segregated high copper clips, 12.00-12.50; mixed low copper clips, 12.00-12.50; mixed high copper clips, 11.00-11.50.

#### REFINERS' BUYING PRICES

(Cents per pound, carlots, delivered refinery)  
**Beryllium Copper:** Heavy scrap, 0.020-in. and heavier, not less than 1.5 % Be, 52.50; light scrap, 47.50; turnings and borings, 32.50.

**Copper and Brass:** No. 1 heavy copper and wire, 22.50; No. 2 heavy copper and wire, 21.50; light copper, 19.25; refinery brass (60% copper) per dry copper content, 21.00.

#### INGOTMAKERS' BUYING PRICES

**Copper and Brass:** No. 1 heavy copper and wire, 22.50; No. 2 heavy copper and wire, 21.50; light copper, 19.25; No. 1 composition borings, 19.00; No. 1 composition solids, 19.50; heavy yellow brass solids, 13.50; yellow brass turnings, 12.50; radiators, 15.50.

#### PLATING MATERIALS

(F.o.b. shipping point, freight allowed on quantities)

##### ANODES

**Cadmium:** Special or patented shapes, \$1.55. **Copper:** Flat-rolled, 43.29; oval, 41.50, 5000-10,000 lb; electrodeposited, 35.25, 2000-5000 lb lots; cast, 37.75, 5000-10,000 lb quantities.

**Nickel:** Depolarized, less than 100 lb, 114.25; 100-499 lb, 112.00; 500-4999 lb, 107.50; 5000-29,999 lb, 105.25; 30,000 lb, 103.00. Carbonized, deduct 3 cents a lb.

**Tin:** Bar or slab, less than 200 lb, 114.50; 200-499 lb, 113.00; 500-999 lb, 112.50; 1000 lb or more, 112.00.

**Zinc:** Balls, 16.00; flat tops, 16.00; flats, 19.25; ovals, 18.50, ton lots.

##### CHEMICALS

**Cadmium Oxide:** \$1.55 per lb in 100-lb drums. **Chromic Acid (flake):** 100-2000 lb, 31.00; 2000-10,000 lb, 30.50; 10,000-20,000 lb, 30.00; 20,000 lb or more, 29.50.

**Copper Cyanide:** 100-200 lb, 65.90; 300-900 lb, 63.90; 1000-19,900 lb, 61.90.

**Copper Sulphate:** 100-1900 lb, 14.05; 2000-5900 lb, 12.05; 6000-11,900 lb, 11.80; 12,000-22,900 lb, 11.55; 23,000 lb or more, 11.05.

**Nickel Chloride:** 100 lb, 48.50; 200 lb, 46.50; 300 lb, 45.50; 400-999 lb, 43.50; 10,000 lb or more, 40.50.

**Nickel Sulphate:** 5000-22,000 lb, 29.00; 23,000-35,900 lb, 28.50; 36,000 lb or more, 28.00.

**Sodium Cyanide (Cyanobrik):** 200 lb, 20.80; 400-800 lb, 19.80; 1000-19,800 lb, 18.80; 20,000 lb or more, 17.80.

**Sodium Stannate:** Less than 100 lb, 76.30; 100-600 lb, 67.20; 700-1900 lb, 64.50; 2000-9900 lb, 62.60; 10,000 lb or more, 61.30.

**Stannous Chloride (anhydrous):** 25 lb, 100.514; 100 lb, 100.465; 400 lb, 100.440; 800-19,900 lb, 100.032; 20,000 lb or more, 97.10.

**Stannous Sulphate:** Less than 50 lb, 100.367; 50 lb, 100.067; 100-1900 lb, 100.047; 2000 lb or more, 100.027.

**Zinc Cyanide:** 100-200 lb, 59.00; 300-900 lb, 57.00.

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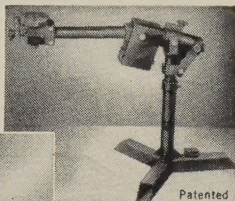
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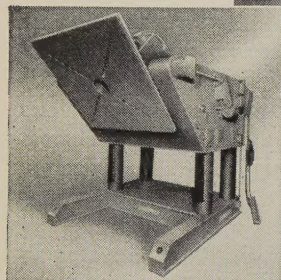


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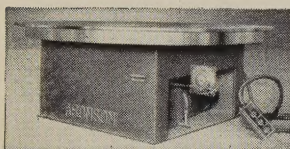
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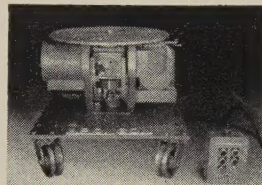
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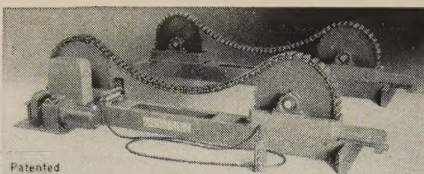
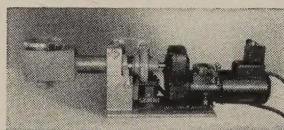


Heavy Duty Floor Turntables with precision speed control and Magnetic Braking, used for welding, burning, X-raying, etc. Capacities to 120,000 lbs., various heights and speeds.



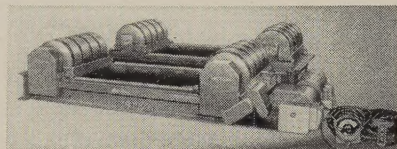
Model D Gear Driven Positioners. Compact, Precise, Rugged. Capacities to 1000 lbs.

Bench Turntable Automatic Positioners with Mercury Grounding. Capacities to 500 lbs.

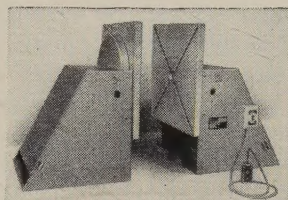


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Aronson TracTred (T.M. Reg.) Turning Rolls for thin-walled heavy cylindrical work to 27 tons capacity. Zero to 100 IPM turning speed and Built-In Grinding.



Heavy Duty Precision Built Rubber and Steel Tired Turning and Pipe Rolls, 100% overload protected. Capacities to 600 Tons.

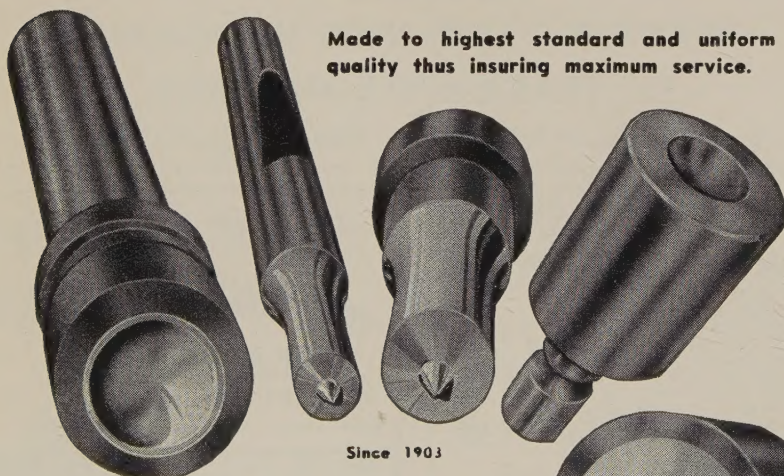


Rugged Head and Tail Stock for positioning bulky weldments between centers. Table Backup for Zero Deflection. Magnetic Braking. Capacities to 160,000 lbs. Geared Elevation Optional.

Quality POSITIONERS by

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tight, and no deals for Texas scrap have been made for August delivery.

**San Francisco** — Mill inventories of steel scrap are plentiful. There appears to be little likelihood that prices will be raised in the immediate future.

**Seattle**—Strength in the eastern scrap markets is not being reflected in this area. Improved demand is expected later this month, but prices are nominal.

**Los Angeles** — Scrap prices are holding in this market, and no revision is in immediate prospect. Lack of mill buying has dulled trading, and export business at northern points has not reached here.

**Pig Iron . . .**

Pig Iron Prices, Page 112

Demand for pig iron is picking up slowly as casting shops return to production following vacation shutdowns. Most merchant iron sellers anticipate a gain in order volume this month compared with that in July, but they look for no solid improvement in demand before early fall.

Wickwire Spencer Div., Colorado Fuel & Iron Corp., Buffalo, last week announced it will put a second blast furnace into production this week. The company reports an upturn in demand for merchant iron, particularly from foundries serving the auto industry.

Wickwire hopes to have its two blast furnaces in operation for about a month. Then it will shut down one unit for relining.

Other steelmakers are planning to add to blast furnace operations. Last week, U. S. Steel said it was restoring its National Tube Div. No. 3 stack to production. This furnace, at McKeesport, Pa., has been down since September, 1957.

**Iron Ore . . .**

Iron Ore Prices, Page 113

The movement of iron ore down the Great Lakes in July continued at a rate below last year's, reflecting slower steel production and large stocks at docks and furnaces.

July shipments totaled 9,589,436 gross tons. That's a drop of 32.5 per cent from the 14,211,819 shipped in the like month of 1957.

Through July, shipments total 21,753,390 tons, off more than 50 per cent from the 44,523,468 reported in the like period last year.